



AGC Sustainability Data Book 2022

AGC Sustainability Data Book 2022
For the Year Ended December 31, 2021

Contents

02	CEO Message
03	The AGC Group at a Glance
Sustainability at the AGC Group	
05	Approach to Sustainability
11	Stakeholders
Governance	
13	Corporate Governance
15	Risk Management
17	Internal Audits
19	Compliance
Environmental	
22	Environmental Management
28	Climate Action
40	Effective Use of Resources
45	Conservation of Natural Capital and Biodiversity
55	Verification Statement
Social	
57	Respecting Human Rights
59	Human Resource Management
62	Improving Employee Engagement
64	Global Promotion of Diversity
67	Work–Life Balance
69	Employee Education
71	Occupational Health and Safety
77	Creating a Comfortable Workplace
80	Industrial Safety and Security
83	Supply Chain
87	Fair Transactions
89	Respect for Intellectual Property Rights
90	Maintaining Information Security
91	Social Contribution Activities
92	Quality Assurance
94	Product Safety Initiatives
96	Pursuit of Customer Satisfaction (CS)
GRI Standards Index	
97	GRI Standards Index

Editorial Policy

Sustainability Data Book 2022 contains non-financial aspects (sustainability reporting) and complements the AGC *Integrated Report 2022*, in which the AGC Group publishes its broad range of business strategies and business activities. The information herein is based on the Core option of the GRI (Global Reporting Initiative) and GRI standards.

In 2019, the report's title changed from CSR Activity Report (Detailed) to Sustainability Data Book. In addition to non-financial data, individual policies, promotional structures, and activity achievements are reported in regard to the Group's CSR activities. Initiatives in the countries and regions AGC operates in are introduced on the AGC Group's sustainability website. The Sustainability Data Book should be viewed alongside the sustainability website to foster a deeper understanding of the social responsibility activities implemented by the AGC Group.

Scope of This Report

Reporting Period

2021 (Jan.–Dec. 2021)

Some information includes content from 2020 and/or 2022.

Organizations Covered in the Report

AGC and its 206 consolidated subsidiaries
(Group companies worldwide)

Primary Notation and Report Subjects Used in the Report

• The AGC Group

Same as "Organizations Covered in the Report" mentioned above

• The AGC Group (Japan)

Group companies in Japan, including AGC

• AGC / the Company

AGC Inc. (on a non-consolidated basis)

• Group companies in Asia

Group companies in Asia, excluding the AGC Group (Japan)

Dates of Publication

Japanese version: July 2022 (Previous date of publication: July 2021)

English version: August 2022 (Previous date of publication: August 2021)

Future Assumptions, Forecasts, and Plans

Sustainability Data Book 2022 is based on the latest information available to the AGC Group at the time of editing this report. Nevertheless, please note that information regarding future forecasts may vary with fluctuations in the business environment that lead to unexpected results and/or phenomena.

Corporate Information (as of the end of December 2021)

Company name	AGC Inc.
Head office	1-5-1, Marunouchi, Chiyoda-ku, Tokyo 100-8405, Japan
Founded	September 8, 1907
Incorporated	June 1, 1950
Capital	¥90,873 million
Stock issued	227,441,381 shares
Employees	55,999 (consolidated) 7,223 (non-consolidated)
Number of consolidated subsidiaries	206 (including 169 overseas)

CEO Message



Yoshinori Hirai

Representative Director,
President & CEO

By advancing sustainability management and continuously creating economic and social value, the AGC Group will realize its long-term management strategy Vision 2030.

The AGC Group is moving forward with sustainability management—an approach that focuses on not only economic value but also social value. Our Vision 2030 sets out the following long-term management strategy: “By providing differentiated materials and solutions, AGC strives to help realize a sustainable society and become an excellent company that grows and evolves continuously.” With the aim of achieving these goals, the vision also establishes a Groupwide strategy, stating that, “With both Core and Strategic Businesses as drivers, AGC will optimize its business portfolio and create economic and social value continuously.”

Based on the long-term social issues identified as our material issues, we have clarified the social value that we want to create. One way in which we will create social value is by *contributing to the realization of a sustainable global environment*. In global initiatives to address social issues, the past few years have seen particular emphasis placed on climate change. In response to this trend, we have declared the achievement of net-zero carbon emissions by 2050 as another goal. As well as redoubling efforts to reduce its greenhouse gas emissions, AGC has developed an array of environment-friendly products. Going forward, we will expand our lineups of such offerings even further.

We also want to create social value by *contributing to the creation of fair and safe workplaces*. To remain sustainable, the AGC Group must diversify its human resources. For this

reason, the development of systems and environments that enable employees of various nationalities to play even more active roles is important. With this in mind, we will promote such employees to management and executive positions.

Based on its founding spirit, the AGC Group has supported the leading companies of each era and helped address social issues by building unshakable relationships of trust with customers and providing *unique materials and solutions*. Continuing this tradition of collaboration and innovation, we will work with customers and society to combine knowledge and advanced technologies, thereby helping make ever-greater achievements possible and bringing bolder ideas to life. We will realize our long-term management strategy Vision 2030 through the cultivation of a shared commitment with all of our stakeholders in accordance with the *Your Dreams, Our Challenge* brand statement and through the tireless creation of economic and social value.

The AGC Group: Providing a Broad Range of Materials and Solutions Worldwide

Description of Businesses

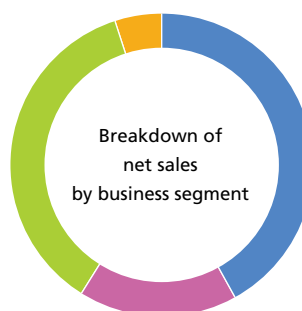
(2021)

AGC Group

Net sales: **¥1,697.4 billion**

Operating profit: **¥206.2 billion**

Group employees: Approx. **56,000**



- Glass Segment **42%**
- Electronics Segment **17%**
- Chemicals Segment **36%**
- Ceramics and other businesses **5%**

Glass Segment	Net sales: ¥734.3 billion Operating profit: ¥27.3 billion		Architectural Glass Net sales: ¥381.1 billion
			Automotive Glass Net sales: ¥351.1 billion
Electronics Segment	Net sales: ¥305.0 billion Operating profit: ¥36.8 billion		Display Net sales: ¥182.1 billion
			Electronic Materials Net sales: ¥121.0 billion
Chemicals Segment	Net sales: ¥630.8 billion Operating profit: ¥138.8 billion		Chlor-alkali and Urethane Net sales: ¥390.4 billion
			Fluorochemicals & Specialty Chemicals Net sales: ¥123.9 billion
			Life Science Net sales: ¥115.2 billion
Ceramics and other businesses	Net sales: ¥79.4 billion Operating profit: ¥3.5 billion		

Notes 1. Sub-segment net sales utilize net sales to external customers.

2. As net sales and operating profit (loss) by business segment are before the deduction of eliminations, the sum of net sales by business segment does not equal Companywide net sales, and the sum of operating profit (loss) by business segment does not equal Companywide operating profit.

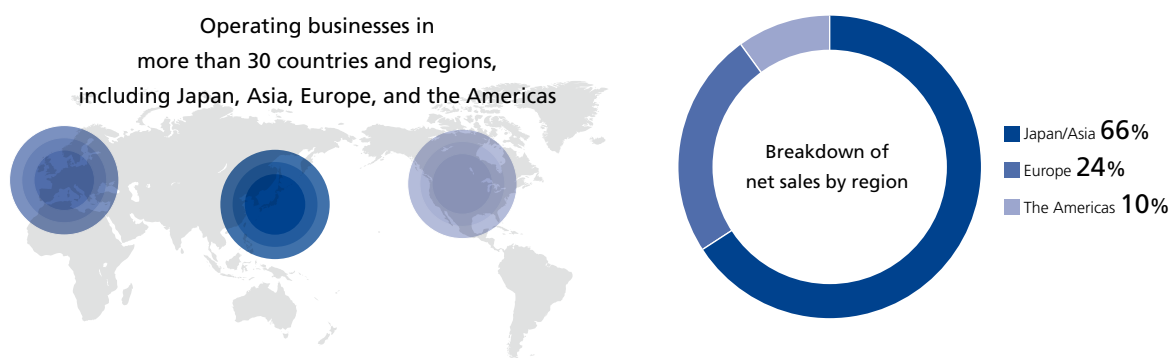
3. Due to corporate reorganization and integration, the reporting segment of cover glass for car-mounted displays, which was previously included in the both the Glass Segment and the Electronics Segment, became the Glass Segment in fiscal 2022.

The AGC Group has established a global business foundation in Japan, Asia, Europe, and the Americas.

The Group strives to create new value with globally top-class, diverse materials technologies, a broad customer base, and advanced production technologies as its strengths, cultivated from over 110 years of experience in our Glass, Electronics, Chemicals, and Ceramics businesses.

Global Expansion

(2021)



	Japan/Asia	Europe	The Americas
Net sales	¥1,124.4 billion	¥398.0 billion	¥175.0 billion
Operating profit	¥198.6 billion	¥37.5 billion	¥10.0 billion
Group employees	Approx. 34,500	Approx. 17,000	Approx. 4,500
Number of manufacturing bases	59	24 (including Africa)	10
Architectural Glass	●	●	●
Automotive Glass	●	●	●
Display	●		
Electronic Materials	●		●
Chlor-Alkali & Urethane	●		
Fluorochemicals & Specialty Chemicals	●	●	●
Life Science	●	●	●
Ceramics	●		

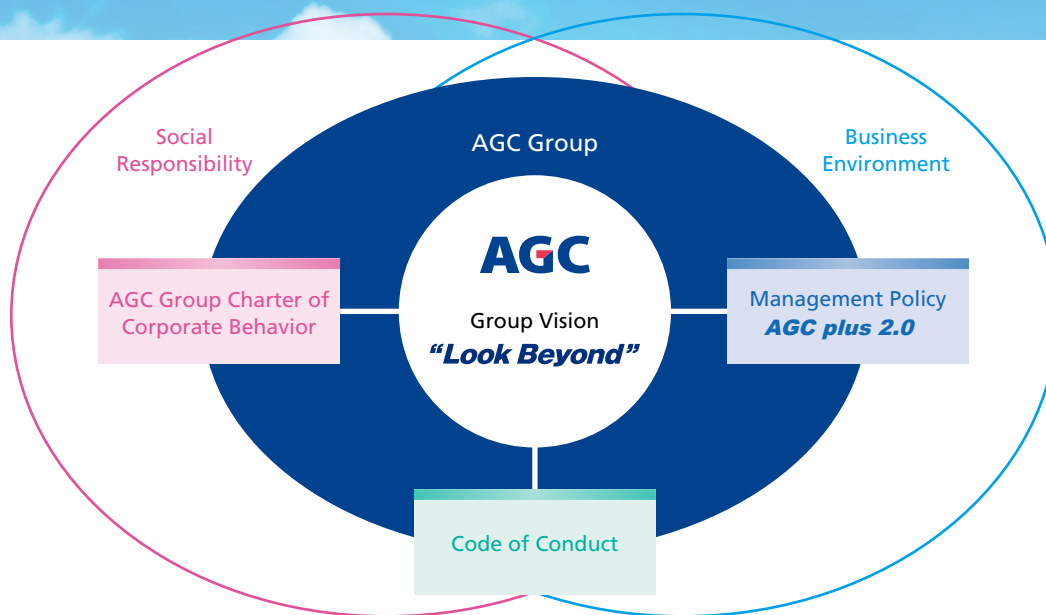
Note: As net sales and operating profit (loss) by region are before the deduction of eliminations and common regional expenses, the sum of net sales by region does not equal Companywide net sales, and the sum of operating profit (loss) by region does not equal Companywide operating profit (loss).

Approach to Sustainability

AGC's Group Vision

Based on its **AGC plus 2.0** Management Policy, the AGC Group will aim to earn the trust and meet the expectations of society and continuously deliver value to the world in accordance with its Mission, Shared Values, and Spirit set forth in AGC's Group Vision "**Look Beyond**", which provides grounding for its business activities.

In addition, we have stipulated in the AGC Group Charter of Corporate Behavior the responsibilities we must fulfill as a company in accomplishing Our Mission and declared that we will act autonomously based on this charter. Through the AGC Group Code of Conduct, we make clear the rules that must be observed to enable all employees to perform their duties based on laws and corporate ethics and to demonstrate integrity in their daily actions.



► Management Policy **AGC plus 2.0**


The Management Policy sets the course of action for all the Group's business activities providing social and business aspirations, guidelines and directives. It is revised as necessary to reflect changes in the business environment and circumstances of the Group.

Based on its **AGC plus 2.0** Management Policy, the AGC Group will realize sustainable growth by providing additional value to all stakeholders.

- Providing safety, security, and comfort to society,
- Creating new value and functions for customers and business partners and building trust with them,
- Enhancing job satisfaction among employees,
- Increasing the Group's corporate value for investors, and
- Building a better future for the coming generations.

▶ Code of Conduct

The Code of Conduct sets forth standards to be observed by all Group members from the perspective of “integrity” in Our Shared Values under the AGC Group Vision **“Look Beyond”**

 [AGC Group Code of Conduct](#)

▶ AGC Group Charter of Corporate Behavior

The Group Charter sets forth and declares the perspectives that form the basis of our behavior to ensure that the AGC Group will remain a good corporate citizen.

AGC Group Charter of Corporate Behavior (Established on June 1, 2007 and revised on March 9, 2016)

Under the tenet of “Our Mission” in the Group vision, **“Look Beyond”** the AGC Group strives to be a company trusted by all of its stakeholders, a company that meets the expectations of the world business community to grow and develop responsibly and a company that significantly contributes to a healthier global society. To this end, the Group has established the AGC Group Charter of Corporate Behavior and acts in line with the following principles.

Integrity: Sincere Behavior

1. The AGC Group will develop and provide useful goods and services of superior quality, giving due consideration to safety and the environment, and will strive for customer satisfaction and loyalty.
2. The AGC Group will understand and comply with applicable laws and regulations of the countries and regions in which it does business and will respect international norms of behavior.
3. The AGC Group will promote fair trade and conduct its operations in accordance with the principle of fair competition and all applicable laws and regulations.
4. The AGC Group will maintain sound relationships with government agencies and other responsible organizations. The Group will not support any person or group that threatens the order and security of society.
5. The AGC Group will properly manage and safeguard its own proprietary information, intellectual property, and other assets and will respect the property rights and interests of others including customers and business partners.

Environment and Safety: With Due Consideration

6. The AGC Group regards environmental conservation as an essential responsibility of global citizens and will proactively contribute to the development of a sustainable society.
7. The AGC Group will pursue technological innovations and new product developments that reflect due consideration for the environment and will participate in activities to preserve the environment and safety and security at work.
8. The AGC Group will maintain its workplaces with a proper regard to occupational health and safety for the people related to its business activities.

Diversity: Respect for People

9. The AGC Group will respect human rights and will operate its business with due regard for the cultures and customs of each country and region in the world.
10. The AGC Group will respect people’s diverse capabilities and personal dignity and will create fair and open environments at its workplaces without discrimination based on race, ethnicity, religion, nationality, gender, disability, or any other legally protected group.
11. The AGC Group will not engage in forced labor or child labor and will not tolerate infringements of human rights.

Harmony with Society: From “Responsibility” to “Reliability”

12. The AGC Group will strive to be a trusted corporate citizen, fulfilling its responsibilities to the communities in which it does business.
13. The AGC Group will build productive and proper relationships with business partners and encourage them to adhere to business principles consistent with its own.
14. The AGC Group will communicate responsibly with customers, local citizens, shareholders, employees, and other members of society by gathering their opinions and disclosing information in a fair and appropriate manner.

The managements of all AGC Group companies, recognizing that it is their responsibility to realize the spirit of this Charter, will take the initiative to achieve an understanding of the Charter within all Group companies, and at the same time, will seek its business partners’ cooperation. The managements will also promote the development and implementation of systems that the principles stipulated in this Charter can be duly incorporated into the Group’s decision making and implementation.

In the case of any behavior contrary to the principles of this Charter, we will work to identify the cause and prevent a recurrence, making it clear to those inside and outside Group companies that the situation is being addressed diligently. We will take appropriate corrective and disciplinary actions when necessary.

AGC Group Vision

“Look Beyond”

“Look Beyond” is the AGC Group’s corporate philosophy on which all the activities of the Group are founded.

Structure and elements of “Look Beyond”



Our Mission

AGC, an Everyday Essential Part of Our World

–AGC’s unique materials and solutions make people’s lives better around the world every day.–

- We, the AGC Group, aim to continue being the “first choice” solution provider for our customers by building long-term trusted relationships with them through unique materials and solutions developed using our wide-ranging material and production technologies. We will continue offering products and solutions that customers and society need, thereby making people’s lives better around the world every day.

Our Shared Values

Innovation & Operational Excellence

- We will seek innovations in technology, products, and services beyond conventional concepts and frameworks.
- We will create value directed at our current and potential customer needs, accounting for changes in the business environment and social and market evolution.
- We will continuously improve all aspects of our operations, striving to achieve benchmark performance.

Our Mission

“Our Mission” expresses the value that the Group should offer to the world, and represents the reason why the AGC Group exists.

Our Shared Values

“Our Shared Values” expresses the key ideas that all AGC Group members must share as the basis for every action we take.

Our Spirit

This founding spirit is precisely ‘the AGC spirit’ that has been handed down from generation to generation and shared by all Group members.

Diversity

- We will respect the diversity of individuals with varied capabilities and personalities.
- We will respect cultural diversity in terms of race, ethnicity, religion, language, and nationality.
- We will respect different perspectives and opinions at all times.

Environment

- We will contribute to the creation of a sustainable society in harmony with nature as a successful and responsible global citizen.
- We will strive to ensure and further improve occupational health and safety in our working environment.

Integrity

- We will build open and fair relationships with all of our stakeholders based on the highest ethical standards.
- We will comply with all applicable laws and regulations.
- We will fulfill our contractual and legal responsibilities to achieve customer satisfaction and trust.

Our Spirit

“Never take the easy way out, but confront difficulties”

- The founding spirit of Toshiya Iwasaki, who established Asahi Glass Company in 1907.

Materiality at the AGC Group (Long-Term Social Issues)

In light of long-term trends in social issues, the AGC Group has identified major opportunities and risks (materiality) associated with simultaneously achieving the sustainable development of the planet and society and the sustainable growth of the Group.

Based on these major opportunities and risks, the AGC Group has established long-term strategies, strategies for each of its businesses, and sustainability (non-financial) targets while engaging in business activities with the aim of creating social and economic value.

Moreover, we have established the Sustainability Committee, which is chaired by the CEO, as a body to deliberate on and determine basic policies and measures regarding such initiatives. The Sustainability Committee's meetings are attended by CEO, CFO, CTO, and all business division heads and are held four times a year, the details of which are reported to the Board of Directors twice a year.

How Long-Term Social Issues (Materiality) Relate to AGC's Business Activities

Key Opportunities

- **Addressing climate change**

Since the Paris Agreement was reached in 2015, a shift toward decarbonization has been gathering momentum. Stricter energy-related policies and statutory regulations are expected. Also, socially calls are growing for companies to achieve net-zero greenhouse gas emissions.

- **Effective use of resources**

There are concerns that stricter regulations on the use of depletable resources, such as rare earths, and higher demand for water resources accompanying further urbanization could seriously impact the production activities of companies. In addition, as the recycling-based economy accelerates, society increasingly expects companies to reduce waste and promote recycling.

- **Developing social infrastructure**

While the economic growth of emerging countries necessitates the development of such social infrastructure as housing, roads, railroads, and public services, developed countries must deal with the aging of their social infrastructure. Moreover, there is a growing need to develop resilient infrastructure that can withstand the intensified disasters being caused by climate change.

- **Achieving safe, comfortable mobility**

The spread of automobiles in emerging countries is causing concern over rising traffic accident deaths. Meanwhile, addressing the mobility needs of the elderly, those living in less-populated areas, and other vulnerable groups in society is becoming increasingly important. Further, as autonomous driving becomes more widespread, expectations are increasing with respect to the establishment of safety technologies, such as sensors and cameras, and the enhancement of in-car entertainment.

- **Addressing food crises**

The problems of hunger and malnutrition in the world's poorest regions have yet to be resolved, and there are concerns that the situation will worsen due to disasters and droughts caused by climate change in recent years. Also, to cope with a growing world population, food productivity must improve.

- **Building an info-oriented, IoT society**

With the spread of information and communication technologies in emerging countries, reliable, inexpensive access to information needs to be provided. In developed countries, the early dissemination of next-generation high-speed communication technologies, such as 5G, promises to improve the quality of remote medical care and information transmission.

- **Facilitating better health and longevity**

Given that the number of young people losing their lives due to non-communicable diseases remains high worldwide, there is a need to reduce such deaths by providing stable supplies of pharmaceuticals for prevention and treatment. In addition, a trend toward increased division and specialization in the pharmaceutical industry, which is aimed at improving the productivity of the industry as a whole and diversifying its risks, is becoming more pronounced.

Key Risks

- **Creating socially and environmentally conscious supply chains**

As supply chains become more globalized and complex, the risk of issues arising in relation to illegal employment, such as forced labor and child labor, at suppliers and subcontractors is increasing. Further, tighter environmental regulations are leading to concern over potential regulatory violations at operating bases.

- **Ensuring fair and equal employment and workplace safety**

There is a growing need for compliance in employment and respect for workers' rights as well as for safety measures at manufacturing sites due to the increasing number of unskilled and elderly workers.

- **Considering relationships with local communities and the environment**

Due to population growth and urbanization in various parts of the world, interest in expanding living areas and maintaining biodiversity in surrounding areas is growing. Also, in emerging countries there is an increasing focus on improving quality of life as living standards improve. Efforts to build good relationships with local residents and governments in the vicinity of operating bases are also becoming more important.

Five Types of Social Value the AGC Group Wants to Create

Addressing social issues and creating five types of social value through business activities



Products and technologies to create social value

Material opportunities	The AGC Group's materials and solutions	Social value	Related SDGs
Addressing climate change	Architectural glass, green refrigerants, automotive infrared cut glass, refractories for biomass boiler, etc.	Contributing to the realization of a sustainable global environment	7 AFFORDABLE AND CLEAN ENERGY, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION
Effective use of resources	Fuel-cell materials, products for recycled raw materials (glass, refractories, etc.)		
Developing social infrastructure	Architectural glass, caustic soda, sodium hypochlorite, sodium bicarbonate, PVC, etc.	Contributing to the realization of a safe and comfortable urban infrastructure	3 GOOD HEALTH AND WELL-BEING, 6 CLEAN WATER AND SANITATION, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Achieving safe, comfortable mobility	Automotive glass antennae, components for automotive sensing radars, HUD components, etc.		
Building an info-oriented, IoT society	Antennae for building windows, materials for semiconductor production, display glass, high-speed communication parts, etc.	Contributing to the realization of safe and healthy lifestyles	2 ZERO HUNGER, 3 GOOD HEALTH AND WELL-BEING, 6 CLEAN WATER AND SANITATION
Addressing food crises	Agrochemical active ingredients/intermediates, film for agricultural greenhouses		
Facilitating better health and longevity	Pharmaceuticals active ingredients/intermediates, high-speed communication parts, high-performance membranes for water treatment		

Create social value through healthy corporate activities

Material risks	The AGC Group's corporate activities	Social value	Related SDGs
Addressing climate change	Continuous energy-saving, development of production technology/facilities to reduce GHG emissions, etc.	Contributing to the realization of a sustainable global environment	7 AFFORDABLE AND CLEAN ENERGY, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION
Effective use of resources	Use of recycled raw materials/materials, reduction of land, etc.		
Creating socially and environmentally conscious supply chains	Supplier selection based on respect for human rights/environmental protection	Contributing to the realization of a healthy and secure society	5 GENDER EQUALITY, 10 DECENT WORK AND ECONOMIC GROWTH, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR THE GOALS
Ensuring fair and equal employment and workplace safety	Increase in employee engagement, prevention of serious disaster/accidents requiring leave, etc.		
Considering relationships with local communities and the environment	Reduce water usage, protect biodiversity, prevent environmental accidents, generate support, etc.	Contributing to the realization of fair and safe workplaces	3 GOOD HEALTH AND WELL-BEING, 8 DECENT WORK AND ECONOMIC GROWTH

Stakeholders

Fundamental Approach

The corporate behavior of the AGC Group is based on its relations with not only customers but also all stakeholders, including shareholders, investors, business partners, governments, NPOs/NGOs, local communities, and employees and their families. Accordingly, the AGC Group Charter of Corporate Behavior states that the Group will seek to communicate with all its stakeholders, including customers, local communities, shareholders, and employees. The Group listens to their opinions and discloses corporate information promptly and fairly.

Management Structure

The AGC Group has established a support department for each stakeholder group and cooperates with relevant departments to proactively disclose corporate information in a prompt and proper manner. The Group also creates opportunities to act on the opinions of its stakeholders for business management, promoting two-way communication between stakeholders and the AGC Group.

AGC Group Communication with Stakeholders

Shareholders and Investors

- Regular stockholders' meetings
- Financial settlement briefings
- Information sessions for investors
- Facility tours
- Publishing *AGC Financial Review*, etc.



Earnings presentation (Japan)

Customers

- Information dissemination with press releases
- Publication of advertorials in online media

Local Communities

- Plant tours, job training
- Employee participation in local events
- Social contribution activities, etc.



Social welfare activities (China)

Employees and Their Families

- The Group's in-house magazine, *We are AGC!*
- Information over the intranet
- Opportunities to exchange views directly with the CEO
- Employee engagement surveys
- Helplines
- Labor-management talks, etc.



The Group's in-house magazine, *We are AGC!*



NPOs/NGOs

- Periodic opinion exchanges
- Cooperation on individual projects, etc.



Donation to a foundation for the visually impaired (Thailand)

Business Partners

- Satisfaction surveys
- Social gatherings
- Dialogue through the AGC Suppliers' Association, etc.



Meeting with business partners (Japan)

Governments

- Dialogue through economic organizations and industry associations
- Dialogue and cooperation with local governments
- Social contribution activities, etc.



CSR-DIW Continuous Award 2021

Groupwide Initiatives

■ Formulation of Group Communication Guidelines

The AGC Group has established Group Communication Guidelines to accurately disseminate Group information. Adhering to guidelines of the public relations divisions of Group companies in Japan, the rest of Asia, Europe, and the Americas, the Group follows rules regarding the dissemination and receipt of information within and outside the Group. Concerning the timely disclosure of Company information, supervisors nominated from each department and major Group companies obtain and release information through the Corporate Communications and IR offices. In addition, negative information is also appropriately disclosed on the Group website and via the media.

■ Communication Tools for Each Type of Stakeholder

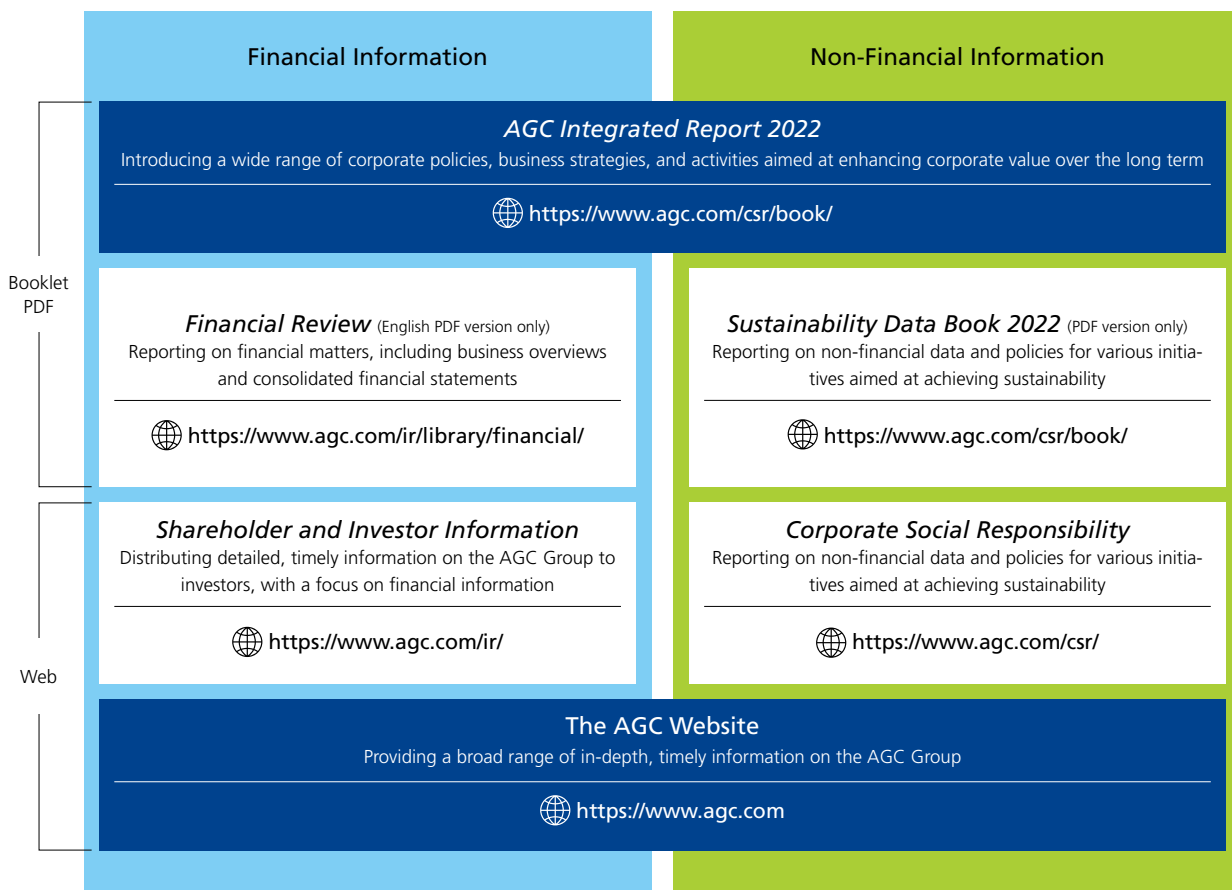
The AGC Group employs a variety of communication tools to satisfy stakeholders' requests, such as pamphlets that introduce the Group management and initiatives (*AGC Integrated Report*, *AGC Financial Review*) and an official website. Since 2013, the Group has been sharing information through social media including Facebook and Instagram.

■ Feedback from Stakeholders via the Website

The AGC Group regularly asks for opinions and comments regarding the AGC Integrated Report and the homepage via its website.

We take these responses into account to further improve our CSR activities and use them in the creation of various reports and our website.

● Main Communication Tools of the AGC Group



Corporate Governance

Fundamental Approach

AGC is constantly working to strengthen and improve its corporate governance with a view to raising the Group's corporate value over the medium and long term and ensure its continuous growth. Accordingly, the AGC Group has established the AGC Group Corporate Governance Basic Policy, a basic approach to its corporate governance system.

Basic Approach to the Corporate Governance System

- Clearly separate the management oversight and business execution functions
- Clearly define corporate and business execution functions in the context of management execution

Attendance of Directors at Board of Directors' Meetings

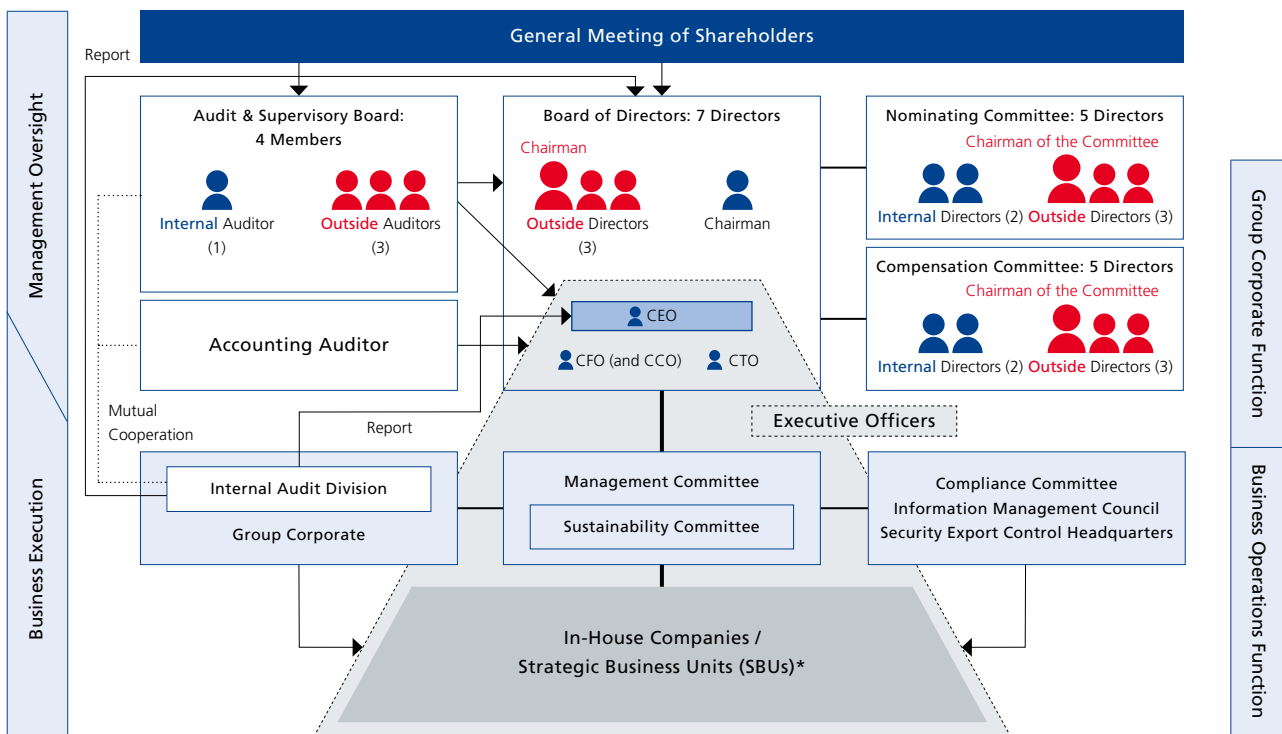
FY	Attendance
2019	99%
2020	100%
2021	99%

Attendance of Audit & Supervisory Board Members at Board of Directors' Meetings

FY	Attendance
2019	100%
2020	100%
2021	100%

AGC's Corporate Governance

The AGC Group's Corporate Governance System (as of March 31, 2022)



Internal directors or Internal Audit & Supervisory Board members Outside directors or outside Audit & Supervisory Board members who satisfy AGC's criteria for independence of outside officers

* An in-house company is defined as a business unit that has net sales exceeding ¥200 billion and which conducts its business globally. At present, there are four In-house companies: the Building & Industrial Glass Company, the Automotive Company, the Electronics Company, and the Chemicals Company. Business units smaller than this are defined as Strategic Business Units (SBUs).

Management Structure

Internal Controls

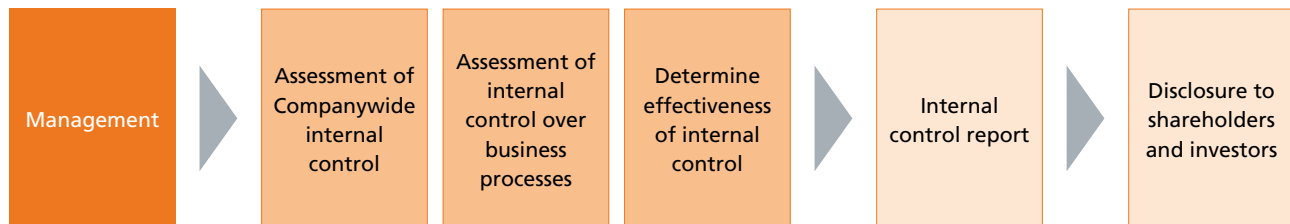
In response to the enforcement of the Companies Act, the establishment of AGC's Corporate Policy on Internal Control was approved by a resolution of the Board of Directors at a meeting held in May 2006. The aim was to review and ensure the appropriateness of the Company's business operation systems, including the compliance system.

Basic Items for Internal Control

1. Compliance program
2. Information retention and management system with respect to business operations
3. Risk management system
4. System to ensure efficient and effective business execution
5. System for reporting by Group companies to AGC
6. Audit & Supervisory Board members' audit system

After introducing a system for preparing internal control reports in compliance with the Financial Instruments and Exchange Act, the AGC Group Internal Control over Financial Reporting Implementation Regulations were established. Based on these regulations, the Group establishes, operates, and evaluates internal controls for financial reporting. Internal controls regarding financial reporting were evaluated as being effective in 2021, and an external auditor confirmed the appropriateness of the system in its evaluation.

Processes Based on Internal Control Implementation Regulations Related to the AGC Group's Financial Reporting



Risk Management

Management Structure

In respect to short- and medium-term risks, the Group has established the AGC Group Enterprise Risk Management Basic Policies based on its Corporate Policy on Internal Control, the establishment of which was approved by a resolution of the Board of Directors. Under this policy, the AGC Group identifies risks that could significantly hinder the achievement of its management targets and carries out risk management by taking steps to mitigate the materialization of risks and by furnishing responses when such risks have manifested.

For longer-term risks, we have identified major opportunities and major risks that could impact the long-term direction of our management or corporate value as the AGC Group's material issues, taking into account global social issues, future risk trends, and the social issues our customers are working to solve. Based on this process, we have established sustainability targets aimed at leveraging opportunities and dealing with risks. As a decision-making body on initiatives related to sustainability, we have established the Sustainability Committee, which is chaired by the president & CEO and membered by the CTO, CFO, and the general managers of each division. Under the supervision of the Board of Directors, the committee also determines policies for dealing with major risks and deliberates future measures based on the level of progress of targets.

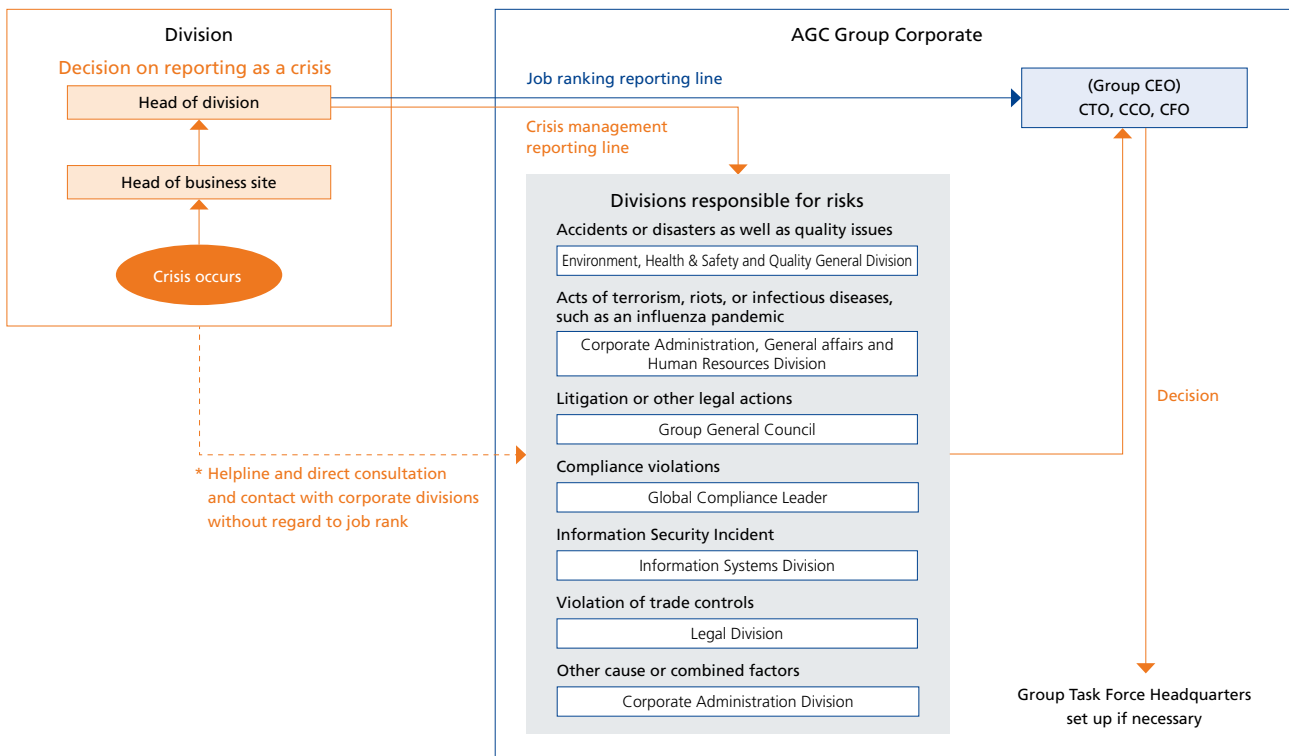
Responding Effectively in the Event a Risk Occurs

To prepare for a crisis that could have a serious impact on its business activities, the AGC Group has established reporting and response procedures in its AGC Group Crisis Management Guidelines and set up a framework designed to minimize the impact of such a crisis. To respond to the occurrence of accidents and disasters, in particular, accident prevention measures are undertaken at each business site, business continuity plans (BCPs) have been established, and improvement measures are continuously implemented to increase the Group's ability to quickly restore and resume operations.

Examples of risks managed by the AGC Group as a whole include those related to the following:

- Natural disasters, such as earthquakes
- Procurement of resources
- Overseas business development
- Serious legal violations
- Environmental regulations
- Market conditions with regard to product demand
- Occupational accidents
- Product liability

Reporting Line During a Crisis Situation



Groupwide Initiatives

Business Continuity Approach

The AGC Group has formulated the AGC Group Business Continuity Plan (BCP) Development Guidelines for use by divisions and business sites when formulating BCPs in preparation for large-scale accidents or disasters. The Group's BCP is continuously maintained and improved upon based on a business continuity management (BCM) process.

Formulating a BCP in Accordance with the AGC Group Basic Policy to Cope with Natural Disasters

Recognizing that a large-scale natural disaster could seriously impact its business activities, the AGC Group has set four priorities to respond effectively: human life and safety first, prevention of secondary disasters, contribution to and coexistence with society, and business continuity.

Based on these priorities, the Group has assessed risks related to earthquakes, wind damage, flooding, and other natural disasters at its major business sites (about 200 around the world). It has produced hazard maps that color-code hazard risks by degree and formulated BCPs for business sites that face high hazards and risks.

At every major business site in Japan and Asia, where there is a high risk of earthquakes, BCPs for earthquakes are fully developed. Furthermore, simulation drills are held every year at AGC's headquarters, with participation by the Group's president & CEO, the heads of each division, and major interested parties. These drills ensure the BCP is understood by all participants while augmenting its effectiveness. In 2021, the Group held an emergency earthquake drill with the supposed epicenter directly beneath the Tokyo Metropolitan Area, including theoretical training exercises and hybrid workshops that combined in-person and online meetings. In this way, the Group enhanced the ability of all divisions to actively cooperate and respond in the event of a disaster.

In addition, since 2009 the AGC Group (Japan) has been using a safety confirmation system for confirming the safety of employees and their families in the event of a disaster while holding such drills Groupwide twice annually. In addition, Group companies in Southeast Asia conduct drills for responding to power outages caused by a natural disaster. The Group intends to repeat these drills in the future to verify how effectively the established BCP can be carried out and to continuously make improvements thereto.

Business Site	Business Site Name	EARTHQUAKE	WIND	FLOOD	TSUNAMI
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Hazard map

AGC GROUP BASIC POLICY TO COPE WITH NATURAL DISASTERS

March 1, 2011

Human life and safety first, prevention of secondary disasters, contribution to and co-existence with society, and business continuity are the four basic priorities to counter natural disasters.

Based on the following priorities, the AGC Group shall plan and implement countermeasures to risks of massive natural disasters before their materialization. When a natural disaster occurs, the Group shall place utmost priority on the security of human lives and safety and make maximum efforts in preventing the spread of damage, supporting the affected local community, and maintaining the Group's important business operations.

- We shall place the highest priority on the security of the lives and safety of all the people involved in the corporate activities of the AGC Group (including employees and their families, customers, suppliers, and people in the local community).
- We shall prevent the damage from spreading and the occurrence of a secondary disaster in order to ensure the safety of the surrounding region.
- We shall always try to coexist with the local community, and when a natural disaster occurs, we shall contribute to the community in a coordinated manner.
- We shall fulfill our responsibility to society and at the same time minimize the damage to our enterprise value by promptly restoring and maintaining the Group's important business operations.

Internal Audits

Establishment and Operation of the Internal Control System

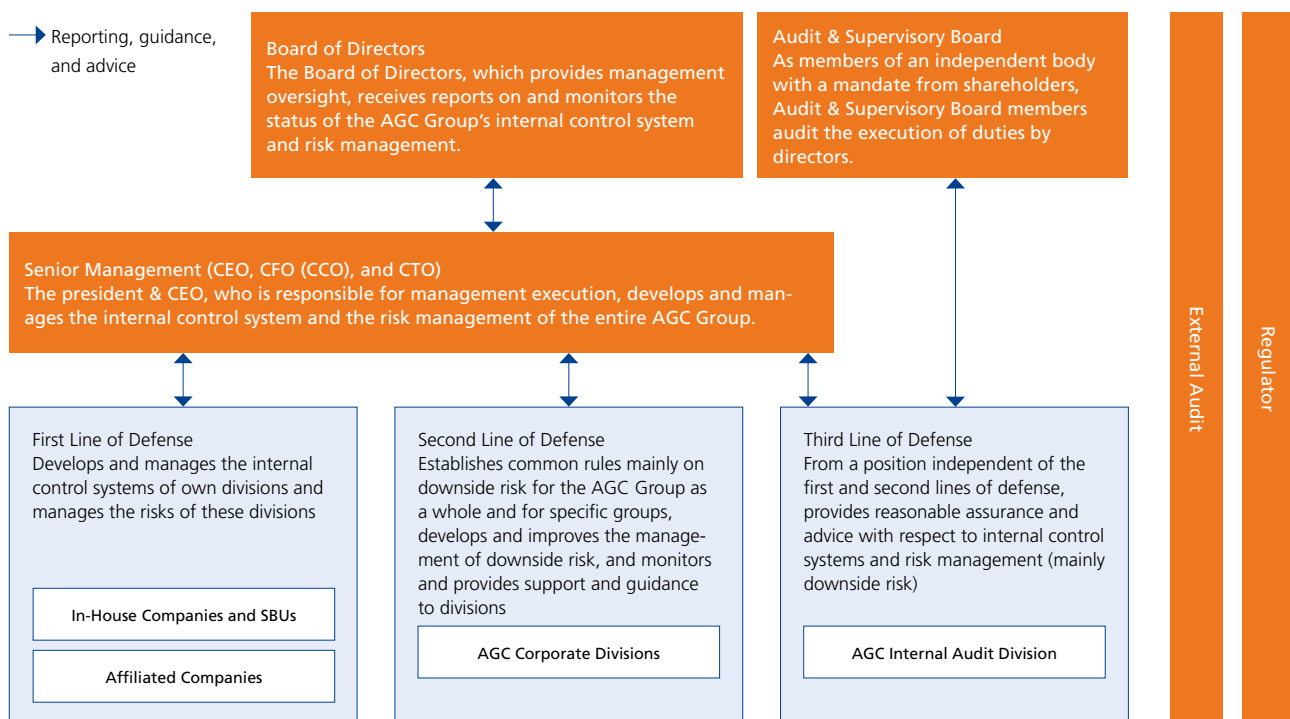
The AGC Group is strengthening its internal control system as detailed below:

- The Board of Directors, which fulfills a management supervisory function, monitors the establishment and operational status of the AGC Group's internal control system.
- The president & CEO, who is responsible for management's executive functions, establishes and operates the internal control system of the AGC Group.

- Audit & Supervisory Board members monitor and verify the internal control system.

With respect to management execution, the AGC Group develops and manages governance and internal controls based on the AGC Group Three Lines of Defense Model, which classifies respective bodies and divisions as first, second, and third lines of defense.

● The AGC Group Three Lines of Defense Model (Reference: The Institute of Internal Auditors—Japan)



Note 1: In the above model, "risk" refers to factors that may hinder the achievement of goals and is classified as business strategy risk and downside risk. In the model, "risk" includes both of these risks, unless otherwise stated. Further, downside risk is cross-business risk related to compliance, the environment, disasters, quality, and other areas.

Note 2: In-house companies and SBUs have established various systems for managing affiliated companies, which include Second Line of Defense functions for them (for example, business planning & administration offices and CSR offices). In cooperation with such offices, AGC's corporate divisions provide support and guidance to affiliated companies.

Internal Audit

To maintain its independence, the Internal Audit Division has appointed a corporate internal audit global leader (head of the Internal Audit Division at AGC) who reports directly to the president & CEO, overseeing the person in charge of each audit division (regional leader) established in Japan, Asia, Europe, and North America.

Under this system, audit departments in each region promote the establishment, operation, and improvement of Group companies' internal controls through effective and efficient auditing. In addition, the corporate internal audit global leader promptly reports important matters identified by audits to the president & CEO and also regularly reports to Audit & Supervisory Board members.

In carrying out internal audits, the AGC Group establishes common global auditing items. In 2021, it established (1) Compliance with Antitrust Laws and Regulations, (2) Information Security Management, (3) Anti-Bribery Control, and (4) Data Accuracy as focus items. In addition, when selecting items for audit, the Group uses criteria established

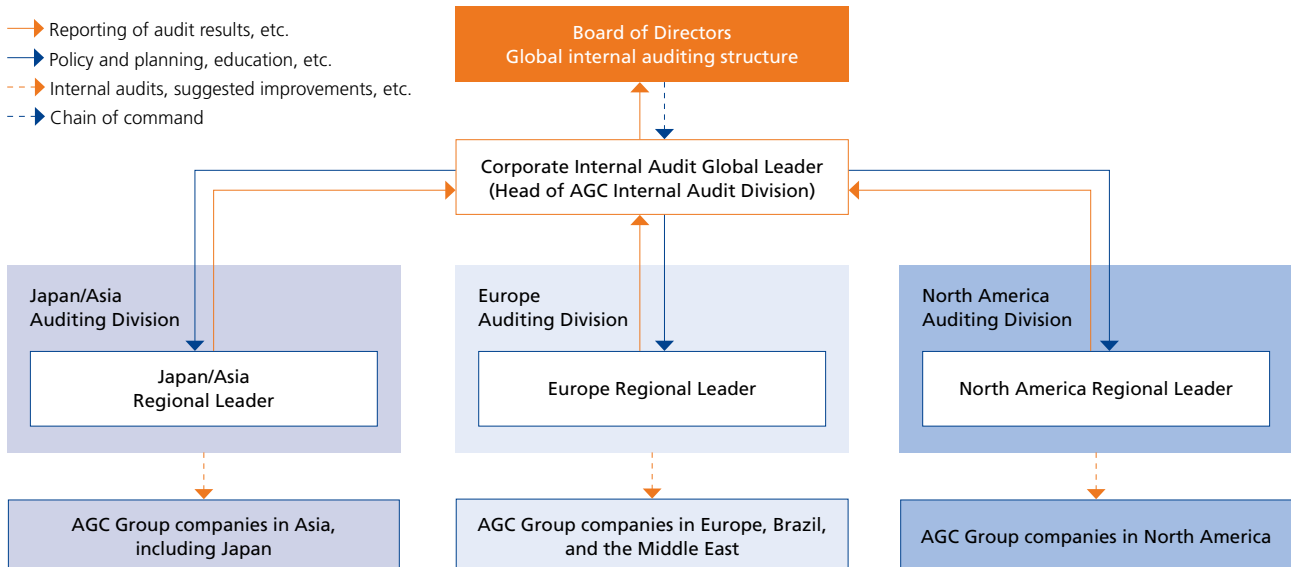
on the basis of risk. However, as in the previous year its auditing activities were impacted by the COVID-19 pandemic, in 2021 the Group audited 29 affiliated companies globally by combining remote audits, collaborative audits with the internal audit divisions of affiliated companies, and data-enabled digital audits in ways that were best suited to the situations at the affiliated companies being audited.

The Group also conducts pre-operational and M&A audits to assess the internal control status of newly established companies and M&A companies. In 2021, it performed 10 such audits globally.

EHSQ Monitoring

Under a management policy based on the AGC Group's Vision "**Look Beyond**", the Group aims to improve social trust, customer satisfaction (CS), and employee satisfaction (ES) through the implementation of environmental, occupational health and safety, and quality management in relation to all of its business activities.

Global Internal Auditing Structure



Compliance

Fundamental Approach

Formulating a Groupwide Code of Conduct

Compliance is the fundamental premise underlying the AGC Group's business activities. To that end, the AGC Group Code of Conduct sets forth requirements for all employees in the workplace. The code comprises global requirements of business conduct that all employees must follow, regardless of country or region, and regional requirements that take into account the laws, regulations, and business customs of those areas. In 2021, the Group revised its Code of Conduct for Japan, and it is currently in the process of revising the codes of conduct of other countries and regions.

The working regulations of each AGC Group company state that a violation of the AGC Group Code of Conduct is grounds for disciplinary action. In addition, if an employee voluntarily reports his or her own Code of Conduct violation, this will be taken into consideration when determining disciplinary action.

Management Structure

Establishment of Global Compliance System

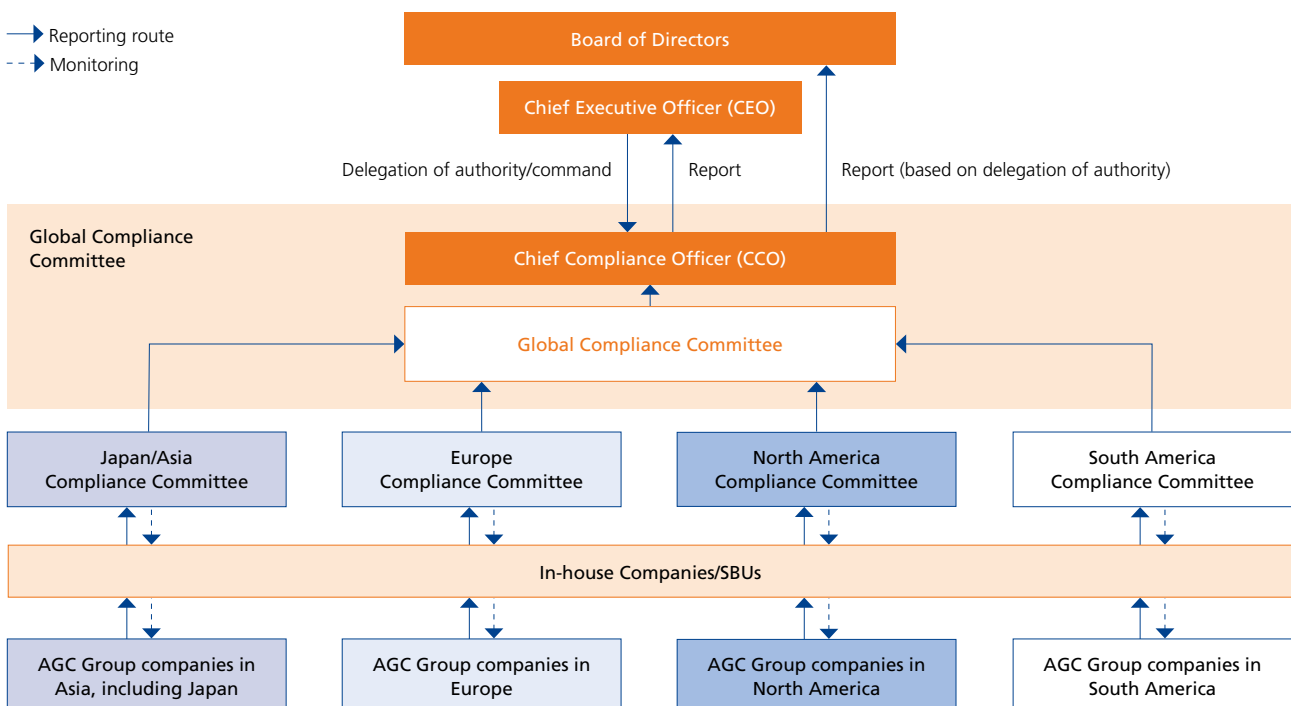
The AGC Group has appointed a Chief Compliance Officer (CCO) responsible for the development of the compliance framework and promotion of compliance in the AGC Group. Under the supervision of the CCO, a global compliance leader, the Global Compliance Committee, and regional compliance committees plan and implement compliance programs and monitor respective regions' compliance efforts. Reports are regularly made to the Board of Directors regarding Groupwide policies and the current status of the compliance system.

In accordance with the guidelines of the compliance reporting system, serious compliance violations are promptly reported to senior management.

Submission of Personal Certification on the Code of Conduct

The AGC Group has introduced a system in which its employees periodically submit a personal certification to follow the AGC Group Code of Conduct. The goal of the system is to turn the submission of certifications into an opportunity for all employees to renew their awareness of compliance and take a fresh look at business affairs and the workplace.

Global Compliance System (as of December 31, 2021)



* The CEO and CCO currently serve concurrently as directors.

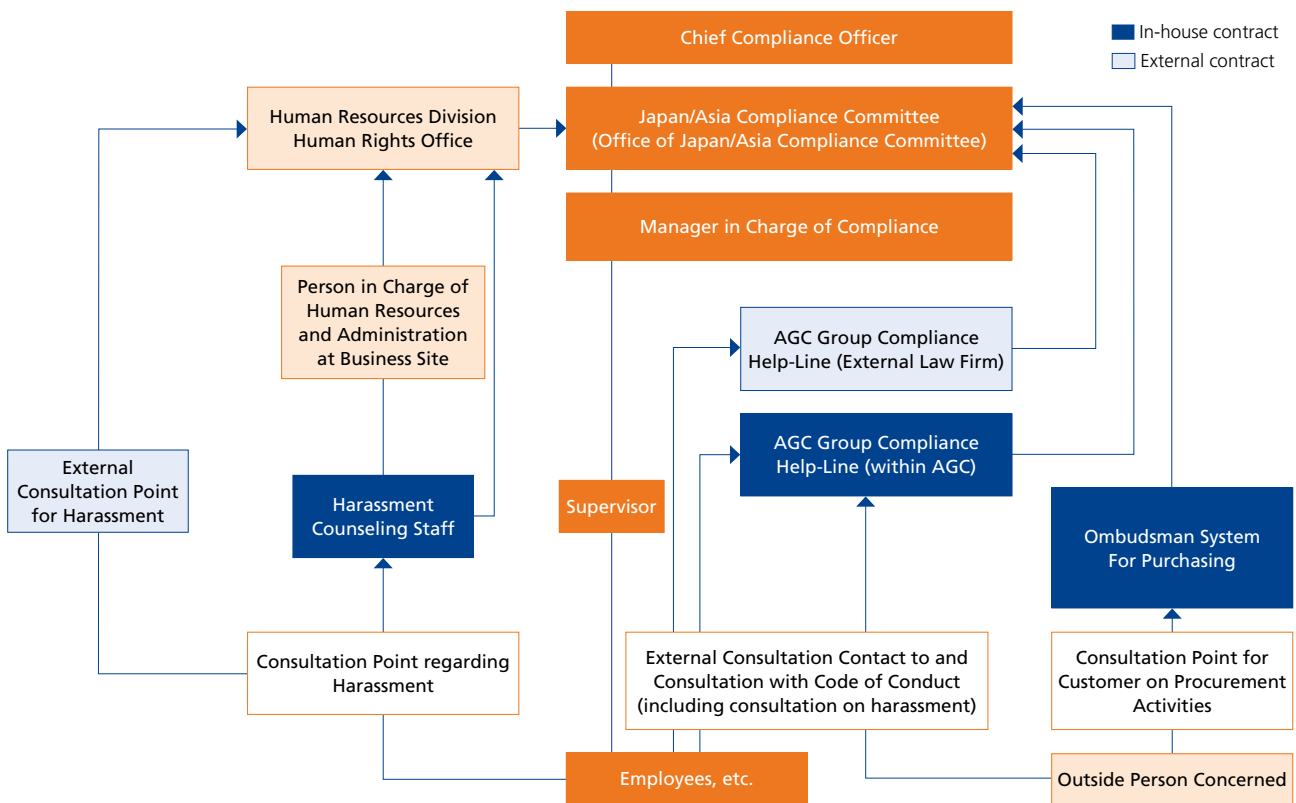
Groupwide Initiatives

Establishing Different Helplines

The AGC Group has established several helplines to serve as consultation desks regarding the Code of Conduct. As a general rule, helplines are set up at each Group company, while additional area-wide helplines have been established in Europe, North America, and Asia. Further, in Japan employees can contact external lawyers, while in global locations a common external contact point has been established. To encourage employees to use the helplines, the Group protects the anonymity of anyone reporting and strictly forbids any act of retaliation against anyone who makes a report in

good faith. When those who report offer their real names, efforts are made to facilitate effective two-way communication and provide feedback on the status and results of handling reported issues. For the purpose of providing helpline contact information, helpline numbers are listed in the AGC Group Code of Conduct distributed to all employees. These members are also publicized in each country and region through efforts such as placing posters at each site.

Helpline Reporting Route (AGC)



Helpline Consultations (AGC Group)

FY	Number of consultations
2021	Approx. 550

Note: The number of consultations includes messages and direct consultations made via the helpline and questions and requests about the system.

■ Implementing Compliance Training

In order to promote the Code of Conduct globally, the AGC Group provides various training opportunities to its employees around the world and has placed particular emphasis on strengthening compliance training worldwide.

For example, the Group continuously implements compliance-related online training (e-learning) for officers and employees. The Group also proactively promotes training activities intended to reinforce compliance in each country and region, including classroom training as well as the production of training materials that include illustrations and quizzes, pocket-sized compliance cards, simulations, video materials for training, and educational posters.

Despite the COVID-19 pandemic, since 2020 the Group has proactively carried out training activities by holding numerous online training sessions in various regions.



■ Implementing Compliance Surveys

The AGC Group uses surveys to gauge the level of compliance in the workplace and the ease of use of helplines. Based on the results, any necessary measures are implemented.

Environmental Management

Fundamental Approach

Initiatives by companies to address environmental issues and build a green society are becoming increasingly important. Mindful of this, the AGC Group recognizes its responsibility to society and ranks environmental initiatives as one of its most important management tasks, as it aims to be a company that develops sustainably with society.

As an expression of this stance, the AGC Group has set forth **“Look Beyond”** as a corporate philosophy upon which all of its business and social activities are founded. **“Look Beyond”** articulates our determination to have perspectives beyond our own fields of expertise and to continue creating value worldwide by pursuing innovations without settling for the status quo while anticipating and envisioning the future. **“Look Beyond”** comprises three elements: Our Mission, Our Shared Values, and Our Spirit. Among these elements, Our Shared Values, which state that we will contribute to the creation of a sustainable society in harmony with nature as a good global citizen, embodies our strong commitment to the environment.

The AGC Group actively carries out activities based on this corporate philosophy, viewing environmental management in terms of efforts to both minimize all environmental impacts resulting from its business activities and mitigate the environmental impacts of its products, with legal compliance at sites throughout the world as its starting point.

The manufacturing processes of glass and chemicals, the AGC Group’s core businesses, entail the use of relatively large amounts of energy and resources, which has a significant impact on the global environment. At the same time, the Group’s products realize energy savings through eco-glass, contribute to the conservation of water and air quality through their use in treating wastewater and exhaust gas, and underpin the foundations of social infrastructure through materials including polyvinyl chloride. Taking these contrasting aspects into account, the Group will strive to minimize its own environmental impacts while maximizing its contribution to solving global environmental issues through its products.

To that end, we have established the AGC Group Environment Policy, which declares that we will realize a sustainable global environment and business management by carrying out initiatives in all phases of our business activities, from procurement and manufacturing to sales, logistics, use, and disposal.

AGC Group Environment Policy

Enacted on February 9th, 2001

Amended on January 1st, 2019

Principle

At AGC Group we recognize that our businesses activities, by using a large amount of resources and energy, have an impact on the environment. In line with AGC Group vision **“Look Beyond”**, we have set the “environment” as one of our company shared values and we are committed to take actions accordingly.

We are also committed to contribute to the creation of a sustainable society as an outstanding player in the global Materials Industry by efficiently utilizing limited resources and energy and by taking account into due consideration our impact on the natural environment, including climate change and biodiversity.

Slogan

Let’s all contribute to environmental activities, as a good global citizens.

Environmental codes of conduct

We commit to adhere to the following key principles:

1. Improve the environmental performance continuously, in accordance with environmental management system.
2. Comply with internal and external relevant environmental rules worldwide.
3. Set goals and do our utmost towards improving environmental impact of our business by addressing responsible use of resources, climate change mitigation and adaptation, waste avoidance and recycling, as well as appropriate management of chemicals substances.
4. Strive to offer to society our products, service and technologies taking into due consideration their environmental impacts.
5. Communicate about our progress to our internal and external stakeholders.

Management Structure

Groupwide Decision-Making Organizations

The AGC Group has constituted the organizations shown in the diagram below in order to make effective use of plan–do–check–action (PDCA) cycles aimed at achieving the environmental targets it has set.



At meetings of the Sustainability Committee, the chief executive officer (CEO)—who serves as the committee chairman—chief financial officer (CFO), chief technology officer (CTO), Audit & Supervisory Board members, and all general managers from business and corporate divisions deliberate on and monitor policies and issues in relation to sustainability management in general for the entire Group. Positioned on an equal footing with the Management Committee, the Sustainability Committee drafts policies regarding sustainability, including environmental activities, and conducts a variety of activities, such as promoting risk management and regulating information disclosure.

The committee also evaluates the results of the monitoring of environmental activities as a whole through an annual EMS Management Review by the CEO, based on which it drafts activities and plans for the next fiscal year and onward.

The AGC Group EHS Committee is chaired by the executive officer in charge of environment-related matters. At meetings of the committee, general managers in charge of such activities at the environmental activities in in-house companies and strategic business units (SBUs) and employees in charge of such activities at corporate divisions, discuss and deliberate methods for implementing management decision-making, particularly pertaining to aspects of environment-related risk resolved on and reported by the Sustainability Committee; the appropriateness of PDCA cycles and corrective actions aimed at continuous improvement based on monitoring; and the level of compliance with environmental laws and regulations. Responsible organizations implement appropriate activities based on the resolutions of the AGC Group EHS Committee in accordance with their respective roles.

Environmental Management System

The AGC Group believes that the implementation of environmental activities, by not only management personnel but all employees in accordance with their respective roles across the entire value chain and the various business formats of each of its business sites, is vital in realizing its environmental targets.

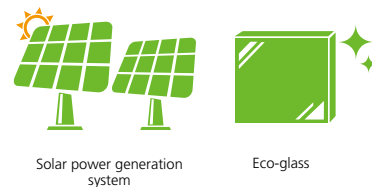
The Group also believes that the active involvement of management personnel is essential to achieving practicable environmental activities. Guided by these beliefs, the Group has established an environmental management system based on ISO 14001 and designated the CTO as the environmental management officer

In promoting sustainability management in its new medium-term management plan, unveiled in February 2021, the AGC Group has established targets regarding actions on climate change, the efficient use of resources, and the conservation of natural capital based on its three material issues in relation to the environment. The Group has created projects for each of these issues, under which it implements a range of activities, including those for reducing environmental impact. Additionally, we have established milestones for 2030 and the achievement of net-zero carbon emissions by 2050 as targets for action on climate change, and set a target of achieving a landfill disposal rate of less than 1% by 2025 as part of our efforts regarding the efficient use of resources. For the preservation of natural capital, meanwhile, we are currently examining how best to establish quantitative targets and fiscal years for their achievement.

Regional Environmental Offices

To implement more timely and substantial environmental

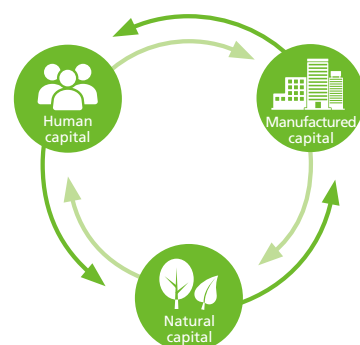
Climate Actions



Efficient use of resources



Conservation of natural capital



activities in accordance with the legal systems and customs of the countries and regions where it operates, the AGC Group has established organizations that provide support for environmental activities at subsidiaries in each region. Our regional environmental office in Shanghai, which we established in 2019, determines the impact of Chinese government policies—such as rapidly changing laws and regulations—on the AGC Group, building a backup system that allows subsidiaries to devise necessary countermeasures in a timely manner to comply with laws and regulations. We are examining the possibility of establishing offices with similar functions in other regions going forward.

■ Development of Products That Contribute to the Global Environment

The AGC Group assesses the environmental impact of its products at not only the manufacturing stage but all stages, such as raw material procurement, sales, logistics, use, and disposal, with the aim of reducing the environmental impact of its products throughout their entire life cycles. In this way, the Group promotes the development and provision of products that help reduce environmental impacts during use and products with longer life spans. To evaluate such products, we carried out Sustainable Development Goal (SDG) mapping that makes visible the SDGs to which our products are relevant and how said products contribute to the achievement of these goals. We are examining the possibility of using a life cycle assessment method in this evaluation going forward.

The AGC Group offers many energy-saving and energy-creating products while striving to further enhance their functionality and performance. Notable examples of such products include eco-glass, an energy-saving glass for architectural use that reduces greenhouse gas (GHG) emissions during heating and cooling through its outstanding thermal insulation properties; Cool verre™, an automotive glass that blocks infrared and ultraviolet rays; SUNJOULE™, a light-collecting, solar power generation module; a fluoropolymer refrigerant with a global warming potential of less than one; and the FORBLUE™ i-Series, a fluorinated electrolyte polymer solution for fuel cells.

In tandem with the development and provision of products that contribute to the creation of a low-carbon society and the reduction of environmental impacts, we are moving forward with efforts to create rules aimed at realizing a sustainable society. For example, we played a part in the publication of technical specifications for the International Organization for Standardization (ISO) regarding methodology for realizing net-zero energy buildings (ZEBs).^{*1} As part of efforts by the ISO to standardize the circular economy, we developed indicators and rules in relation to circularity, such as the recyclability of products, which will contribute to the effective utilization of resources. At meetings of the International Electrochemical Commission, we are advancing the standardization of GHG emissions reduction

contributions^{*2} and creating rules for contributing to GHG reductions through the entire product life cycle.

The number of patents owned^{*3} by the AGC Group that are classified^{*4} as relating to the SDGs (Goals 7, 12, and 13) that contribute to the creation of a low-carbon society stands at 595 (as of June 2022), accounting for approximately 10% of all AGC-owned patents.

*1 ZEBs are buildings designed to achieve net-zero use of primary energy.

*2 The quantified volume of GHG emissions reductions resulting from evaluated products that help reduce environmental impact throughout their entire life cycles

*3 The Group classifies its patents by the SDGs using PatentSight, a patent analysis tool developed by Lexis Nexis Intellectual Property Solutions.

*4 Patent families that have been registered or are in the process of being registered

The AGC Group acquires third-party certification for its environmental products. In 2010, AGC Glass Europe S.A. became the first company in Europe to see its flat glass and coated glass become Cradle to Cradle Certified™ products. Cradle to Cradle Certified™ products also earn Leadership in Energy and Environmental Design (LEED) (green-building rating system) credits, thereby contributing to the improvement of customers' environmental ratings.



Cradle to Cradle™ Certificate

Monitoring

The AGC Group has established the AGC Group Environmental Management Working Rules in order to better ensure the achievement of the targets it has set to reduce environmental impacts resulting from its business activities and to clarify organizational roles and responsibilities. The rules establish three environmental activity levels for all AGC Group sites according to their environmental impact, assigning environmental activities to them based on their respective level. Regardless of their environmental activity category, the Group stipulates that sites carry out various activities—such as raising awareness of and thoroughly implementing the AGC Group Environment Policy and adhering to legal requirements, the AGC Group's standards, and other regulations—and monitors such activities periodically.

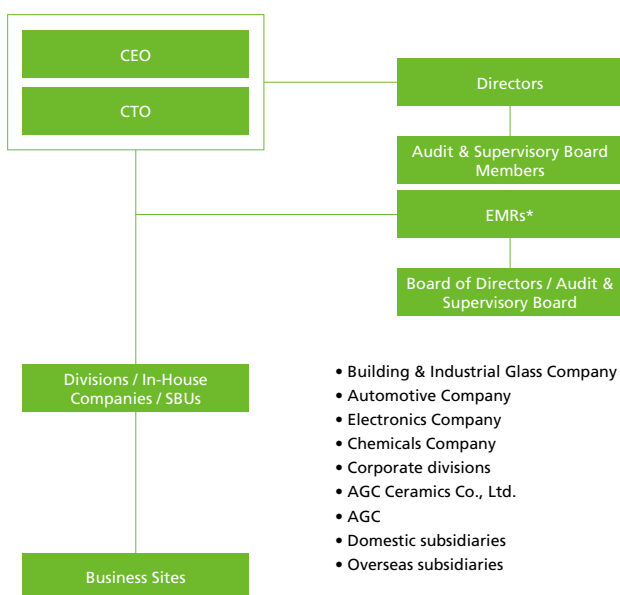
Sites with clear environmental risks must obtain environmental system standards certification or implement activities based on such certification, collect environmental performance data, and undergo environmental compliance reviews.

■ Environmental Management System in Accordance with ISO 14001

The AGC Group Environmental Management Working Rules mandate that sites obtain environmental management system standards certification, such as ISO 14001, or stipulates that they implement environmental activities based on environmental management system standards, depending on their environmental activity level. In addition, the AGC Group has had in place the AGC Multisite Certification Environmental Management System (Multisite EMS) since 2003, the scope of which covers certain subsidiaries. Organizations participating in the Multisite EMS are reviewed by a single external review organization under the same assessment criteria and receive a single ISO 14001 certification. The Group monitors sites receiving certification other than through Multisite EMS by confirming the results of external reviews.

The operational conditions of the environmental management system and the outcomes of its initiatives are evaluated objectively through internal and external audits, with monitoring implemented by in-house companies and SBUs in charge of sites and by the Environment Office of the AGC head office. The results of such audits and monitoring are shared with the AGC Group EHS Committee, which incorporates them into environmental management plans for the Group as a whole and for each in-house company and SBU and uses said results in the formulation of subsequent improvement plans. Results are also reported to management personnel through the Sustainability Committee and the EMS Management Review.

● The AGC Group's Environmental Management System (As of March 31, 2022)



* Environmental management officers

The AGC Group has established the Environmental Manual as a set of operational standards for the Multisite EMS, which stipulates that the Multisite EMS Secretariat and all divisions must undergo an internal audit at least once a year. The internal audits verify the level of compliance with standard requirements, consistency with the Group's internal policies and fiscal-year issues, conformity with the purpose and goals as well as the implementation plans of the Multisite EMS, in addition to ensuring that the operation of the Multisite EMS is in line with various regulations and that environmental performance is improving.

The Multisite EMS establishes common global themes as focus areas for external audits. With the utilization of environmental technology to tackle climate change and understanding and management of chemical substances set as focus areas in 2022, the AGC Group is striving to incorporate consideration for the environment and the perspective of tackling climate change into all of its business processes.

● Number of Companies Obtaining Environmental Management System Standards Certification (Subsidiaries Obtaining Certification, Including Small-Scale and Non-Manufacturing Sites)

Japan, including AGC	20
Overseas, excluding Japan	53
Total	73 (including three equity-method companies)

87.3% of subsidiaries with manufacturing sites have obtained certification.

[List of subsidiaries to have obtained certification](#)

Environmental Education

The AGC Group holds explanatory forums at its sites in Japan regarding general knowledge on environmental issues and its environmental initiatives while promoting awareness of such matters on a Groupwide basis through animated features and its Sustainability Data Book. The Group prepares this document and other educational materials in several languages, including Japanese, English, and Chinese. In addition, we carry out rank-specific environmental training for employees including senior managers, newly appointed managers, new employees, and those with responsibility for the environment, incorporating environmental education tailored to their respective responsibilities. In Europe, we have adopted environmental and sustainability education in the introductory educational programs that all new employees take in regions around the world, regardless of their employment status, with the aim of incorporating the perspective of achieving environmental targets into the work of all employees.

In addition, we are working to develop human resources with skills in environmental management and raise the level of environmental management at our business sites by leveraging a skills map, the AGC Group's own human resource

database. The Group facilitates mutual communication among employees in charge of the environment by holding meetings, lectures, and site visits five or six times a year for such employees from headquarters and various business sites, in order to provide them with opportunities to share information on recent environmental trends and environmental management technologies and to enable them to communicate on topics such as environmental management methods and challenges, as well as measures for addressing such challenges.

In addition to such Groupwide educational activities, in-house companies and SBUs continuously hold meetings, training, and other activities for employees in charge of the environment from Group companies with a view to achieving their environmental targets and solving environmental issues.

AGC's human resource systems have established programs supporting employees in their acquisition of qualifications, including those related to the environment.

■ Environmental Initiatives in the Value Chain Other Than AGC's Own Activities

Environmental initiatives in AGC's supply chain and its environmentally conscious procurement methods are described on pages 83-86 of this document.

■ Environmental Awards in Fiscal 2021

Japan

■ AGC Electronics Co., Ltd.

- Received the Merit Award in the 2020 Advanced Category for the Fukushima Protocol

■ AGC Si-Tech Co., Ltd.

- Certified as a superior company in the generation of industrial waste by Kitakyushu City

China

■ AGC Automotive (Suzhou) Inc.

- AASZ De-SOx and De-NOx facilities received a government award of 2,970,000 RMB

Taiwan

■ AGC Display Glass Taiwan Inc. received the following awards.

- Bronze at the 3rd National Corporate Environmental Conservation Awards
- Excellence Award for Overseas Companies at the 14th Taiwan Corporate Sustainability Awards
- Excellence Award for Overseas Companies and Excellent Business Person Award at 75th Jinshangjiang Awards

Note: Names of awards have been translated into English for reference purposes only.

Thailand

■ AGC Techno Glass Thailand

- Received an award for its waste management

■ Vinythai Public Company Limited received the following awards.

- Eco Factory
- Green Industry Level 4
- Environmental Good Governance (White Flag—Green Star Award)
- ESG 2021

Indonesia

■ PT Asahimas Flat Glass Tbk

- Performance Rating Program in Environmental Management (proper) with Blue status from Government

■ External Communication Regarding Environmental Management

The AGC Group proactively and earnestly discloses information externally regarding its environmental management through responses to various external questionnaires and via its integrated report, Sustainability Data Book, and sustainability website. Although we previously conducted tours of manufacturing sites, we have refrained from doing so in recent years due to the impact of COVID-19. Internally, we share our responses to external questionnaires and strive to communicate through our own internal materials, various meetings, and environmental education.

■ Violations of Environmental Laws and Regulations and Serious Environmental Incidents

During 2021, there were no environment-related legal violations, sanctions, or cases raised in dispute resolution mechanisms that had a significant impact on the AGC Group's financial results or corporate reputation. Moreover, there were no serious environmental incidents that affected the environment, neighboring communities, or other stakeholders.

Initiatives to Prevent Environmental Incidents

The AGC Group assesses the risks and impacts of environmental incidents at every site and implements various physical measures to address them, such as creating a range of materials, including instructions and manuals on preventing leaks on troubleshooting, holding regular drills, and installing liquid containment barriers, alarms, and telemeters.

■ Environmental Legal Compliance

In addition to declaring its respect for the law in the AGC Group Charter of Corporate Behavior, the AGC Group makes identifying and complying with legal requirements compulsory throughout the entire Group in the AGC Group Environmental Management Working Rules, which establish an environmental management system framework as a mechanism to ensure environmental legal compliance. We have also set voluntary standards at sites where legal standards are applicable to mitigate risks.

■ Environmental Initiatives and Other Efforts Signed or Supported by AGC

AGC is a signatory to or participant in the following international initiatives.



Task Force on Climate-Related Financial Disclosures



Japan Climate Initiative



2021 CDP Climate Change, A- Rating



Corporate member of WWF Japan



Keidanren Initiative for Biodiversity Conservation



Japan Clean Ocean Material Alliance



Japan Business Initiative for Biodiversity

Climate Action

Climate Action

For AGC, climate change and other global environmental issues are material issues for sustainability management. Opportunities and risks associated with climate change are factors that can have significant impacts across our entire value chain, from procurement of raw materials to manufacturing, logistics, sales, and disposal and end-of-life product treatment, while also affecting value creation models and business strategies. AGC endorses the principles of the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board, and, properly discloses information about our opportunities, risks and analyses of climate change.

■ Governance

Management Structure

In the medium-term management plan, **AGC plus-2023**, management has identified as material issues for the AGC Group major opportunities and risks that may impact its corporate value and the long-term direction of management at AGC, taking into account future trends in global social issues and risks, as well as social issues that its customers are trying to resolve. Accordingly, AGC has set sustainability targets that aim to deal with risks while taking advantage of opportunities.

Addressing climate change is a material issue for us. The Board of Directors, which meets once a month, in principle, receives reports on progress addressing climate change. Guided by proposals made by the Board of Directors, the Company devises countermeasures to climate change, creates strategic plans, and evaluates, approves, and monitors progress on these initiatives and plans.

Chaired by the CEO and comprising the CTO, CFO, and the general managers from each division as members, the Sustainability Committee is a decision-making organization for sustainability initiatives that meets four times a year. The Sustainability Committee is positioned on an equal footing with the Management Committee, and under the supervision of the Board, it is responsible for deciding and monitoring the execution of sustainability-related matters, including climate actions. The Sustainability Committee deliberates on policies to address climate change based on the identified opportunities and risks arising from climate change for the entire AGC Group, the results of monitoring greenhouse gas emissions, and related issues.

Based on the decisions made by the Sustainability Committee, the CFO and CTO are responsible for executing climate actions in accordance with their duties. The Strategy Meeting for Climate Change, which is led by the general manager of the Sustainability Division in the Corporate Planning General Division, deliberates in a timely fashion our actions to risks and evaluates strategies in light of changes inside and outside the Company that result from climate

change. The AGC Group Greenhouse Gas Emissions Reduction Framework Committee, which is led by the general manager of the EHSQ General Division, works closely with specialist entities in the organization on data management, technological innovation, energy management, and supply chain management with the aim of reducing greenhouse gas emissions around the world and across the entire business.

■ Strategy

Since our founding, we have tackled social issues and responded to the needs of society in each era through R&D and commercialization activities from a long-term perspective, based on a foundation of trust with our customers. With the medium-term management plan positioned as the second phase toward realizing Vision 2025, AGC has accumulated five strengths since its establishment that are core to its value creation model while executing a cycle of resolving social issues with its business foundation supporting ongoing efforts to advance measures.

Identification of Climate Change-Related Opportunities and Risks

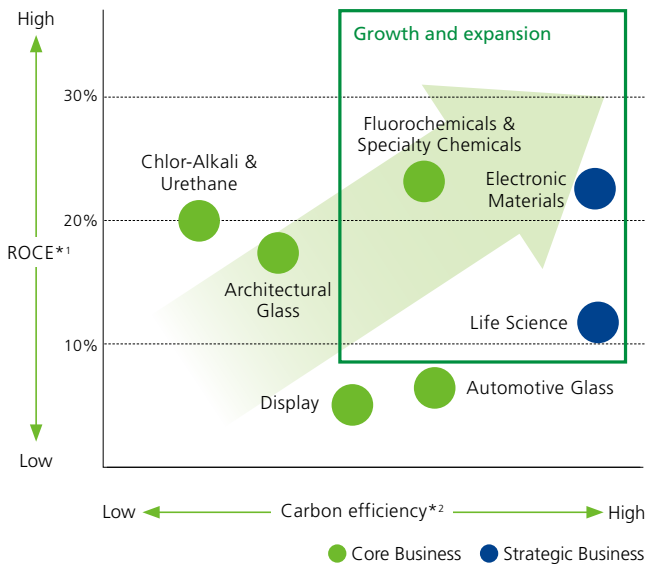
From the short term to long term, various changes brought about by global environmental issues, including climate change, present opportunities and risks for the AGC Group. The Group defines the short term as until next year the medium term as three years from now, and the long term from 2030 onward. We identify and assess climate change-related opportunities and risks that may have an impact on our operations, taking into consideration the perspectives of both the mitigation of and adaptation to climate change, while evaluating the possibility of underlying changes in operations, earnings, and expenses.

Specific Examples of Climate Change Risks and Opportunities

Strategy	Content	
Accompanying risks	Policies, laws, and regulations	Cost increases due to carbon pricing, such as a carbon tax, and other expanded regulations on GHG emissions
	Technology	Increased costs to realize the transition to low-carbon technology, such as establishment of manufacturing methods that do not require fossil fuels
	Markets	Decrease in demand for existing products due to changes in consumer preferences
Physical risks	In the short term	Effects on operations and logistics due to natural disasters such as heavy rainfall, floods, and droughts
	In the long term	Effects on operations and logistics due to inundations caused by long-term rising sea levels, greater frequency of storms, and typhoons stemming from an average global temperature increase Heatstroke in hot workplaces during the summer due to the rise in average global temperature
Opportunities	Resource efficiency	Cost reductions through more efficient use of mineral and water resources
		Diversification of raw material options by utilizing recycled resources such as client change cullet and recovered fluorite
	Products	Development and sales promotion of products that contribute to the alleviation of and adaptation to climate change, such as Low-E double-glazing glass, alternative fluorocarbons with low global warming potential, and ion-exchange membranes that contribute to the production of drinking water and water reuse
Markets	Access to new markets leveraging the strengths of the Group's technologies	

Based on these observations, we strive to expand Strategic Businesses with high carbon efficiency and asset efficiency and formulate business plans to take advantage of opportunities while reducing risks through initiatives to improve the carbon and asset efficiency of Core Businesses.

Direction of Business Portfolio



*1 ROCE = Operating profit forecast of the current fiscal year ÷ Operating asset forecast at the current fiscal year-end (based on fiscal 2023 targets)
 *2 Based on actual emissions intensity per unit of sales in 2020

Analysis of Climate Change Scenarios

AGC performed a scenario analysis for the Automotive Glass Business based on the TCFD framework, taking into consideration the impacts that climate change might have on its value creation model and decisions about business strategies. Based on this scenario analysis, we drew up plans to mitigate risks and tap into opportunities in order to maintain the resilience of the AGC Group against the impacts of climate change.

Since the AGC Group has a business presence around the world, our scenario analysis referenced the International Energy Agency's (IEA) 2°C Scenario (B2DS), the IEA's Sustainable Development Scenario (SDS), the IEA's New Policies Scenario (NPS), the IEA's Current Policies Scenario (CPS), and Nationally Determined Contributions (NDCs).

Using a multidimensional matrix to categorize in terms of procurement, markets, customers, governments, investors, and society, we estimate the level of opportunities and risks in terms of quantitative and qualitative impact, as well as the likelihood of their materialization. We screened for events that would have a high estimated impact if an opportunity or risk actually materialized.

For the AGC Group, an important factor under the 2°C Scenario is how much costs will increase due to government policy for the transition to carbon pricing. Under the 4°C Scenario, it is important to evaluate and take countermeasures for the potential impact on production sites and suppliers if climate change causes increases in flooding, high tides, and higher ocean levels that have catastrophic effects on property.

Climate-Related Opportunities

We view contributing to reducing greenhouse gases in society as a business opportunity for the AGC Group and are advancing the development and proliferation of products that help reduce greenhouse gas emissions during use.

In the Glass Segment, we expect demand to strengthen for products that can reduce energy consumption when final products are used, such as eco-glass. We aim to increase sales of environmentally friendly products, such as vacuum-insulating glass, and develop glass production technologies that help conserve energy.

In the Chemicals Segment, we anticipate stronger demand for new environmentally friendly coolants with low global warming potential (GWP). Based on the idea of considerably reducing GWP while maintaining the performance of

coolants and solvents, AGC is helping reduce greenhouse gas emissions across society by expanding sales of AMOLEA™, a next-generation coolant and solvent that lowers GWP below 1 and ozone depletion potential (ODP) to roughly zero. Beginning with SELEMION™, an ion-exchange membrane used to produce drinking water by filtering out salt and nitrogen from well water, AGC endeavors to develop and spread products that mitigate the impact of climate change.

Moreover, as an environment and energy business, we are keen to develop and spread products that facilitate the proliferation of hydrogen and renewable energy. One such product is our fluorinated electrolyte polymer solution for fuel cells, which features both high power generation performance and durability as a material used in power generation systems of fuel-cell vehicles (FCVs), a next-generation mobility solution. In both Core and Strategic Businesses, AGC is accelerating the development of technologies and businesses in the environment and energy domains.

Climate-Related Risks

AGC anticipates a rise in costs to address transitional risks as stakeholders increasingly demand more contributions to decarbonization through business activities, while countries and regions strengthen regulations to combat climate change and set goals to reduce greenhouse gas emissions to comply with the Paris Agreement, among other international initiatives. A growing number of suppliers intend to increase energy efficiency throughout their supply chains, and if customer expectations are not met, demand for existing products might weaken.

If regulations become stricter around the world to keep temperatures rising as little as possible and if countries introduce carbonpricing, the potential long-term impact could reach several billion yen. AGC will fine-tune its analysis to quantitatively assess the impact on its profits, costs, assets, and liabilities along different timelines.

AGC also assesses water risks due to climate change. At sites in regions identified to have a high likelihood of natural disasters caused by torrential rainfall, flooding, or drought,

based on the results of our assessments, we calculate the impacts on operations and formulate business continuity plans and countermeasures for facilities in a bid to reduce potential damage.

In addition to the direct impact from climate change, we conduct evaluations of the impact on natural capital in terms of water use, energy use, land use, and waste generation.

Risk Management

Process for Identifying and Assessing Climate-Related Risks

We have created the AGC Group Enterprise Risk Management Basic Policies for the AGC Group's risk management systems for short- and medium-term risks, and we maintain a framework for managing risks and responding to crises.

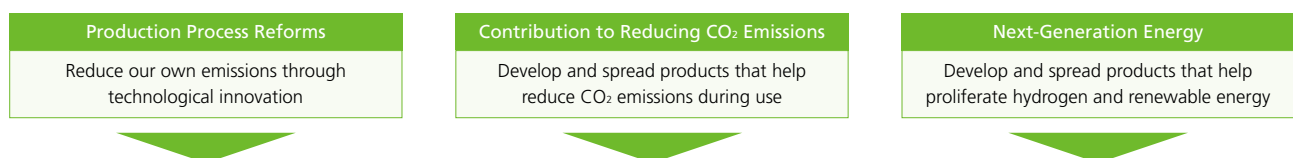
For long-term risks, we strive to understand various opportunities and risks that could arise from climate change and aim to minimize risks and reinforce our competitiveness by continuing to evaluate the appropriateness of our strategies based on scenario analysis.

Process for Management of Climate-Related Risks

The Board of Directors and the Management Committee regularly monitor identified climate-related risks and perform the management thereof. Corporate divisions, in-house companies, and strategic business units (SBUs) analyze risks and examine countermeasures for each business and project. If necessary, such risks are deliberated on by the Board of Directors and the Management Committee.

Integration of Risk Management Processes with Climate-Related Risk Identification, Assessment, and Management Processes

Risks likely to have a major impact on the operations of the AGC Group if they were to materialize are classified as "major risk factors," and the management team maintains and operates a framework for monitoring the Groupwide management of these risks. For climate change risks deemed as major risk factors, AGC has created the AGC Group Risk Management Implementation Rules to guide management on



Example Initiatives

Glass-melting process

- Introduction of highly energy-efficient oxygen combustion methods
- Introduction of electric boosters for melting to reduce fuel consumption
- Acceleration of electrification of melting heat sources

Vacuum-insulating glass

- Development of vacuum-insulating glass with Panasonic Corporation with highest-class* performance in industry
- Contribution to improvement of living environments in Europe, the largest market for insulating glass

Fluorinated electrolyte polymer solution for fuel cells

- Parts and materials for power generation systems of FCVs, a next-generation mobility solution
- Establishment of dominant No. 1 position with high quality based on high power generation performance and durability

* Heat transmission coefficient for 6-millimeter vacuum-insulating glass is 0.7 W / (m² · K). As of October 15, 2018. AGC survey

how to regularly self-inspect the level of risk management in their organizations and monitor the results.

Addressing of Climate-Related Risks

As frameworks for reducing greenhouse gas emissions (Scope 1 and Scope 2) associated with its business activities, while preparing to respond if countries and regions enhance or introduce carbon-pricing schemes like those identified in our scenario analysis, in 2020 the AGC Group introduced carbon cost simulations (calculating net present value (NPV) per unit of greenhouse gas emissions in investment projects) and, in 2022, rolled out an internal carbon-pricing scheme. The Group has set ¥6,500/t-CO₂ as a benchmark for business investments and capital investments for reducing greenhouse gases.

Additionally, we are reducing energy use through measures to conserve energy and switching from fossil fuels to non-fossil fuels as sources of energy. For glass-melting processes that are already highly efficient in terms of carbon emissions, we are introducing oxygen combustion methods with even higher energy efficiency, introducing electric boosters for melting that reduce fuel consumption, accelerating the electrification of melting heat sources, and conducting trials with ammonia combustion.

As a strategy to counter physical risks, we envision what impacts abnormal weather could have on our production processes and sales operations, as well as predicting possible impacts on costs, product transportation, and raw material procurement. Moreover, the AGC Group newly calculated the expected amount of damage natural disasters inflict on its operations and will reflect this in its capital investment plans while moving to reduce procurement risks.

■ Indicators and Goals

In order to create five types of social value through its business activities and core initiatives, the AGC Group bases its climate-related targets on greenhouse gas (GHG) emissions (Scope 1, Scope 2, and Scope 3) as a key performance indicator. For Scope 1 and Scope 2, with the aim of achieving net-zero carbon emissions by 2050, the Group has adopted milestone targets for reducing GHG emissions by 30.0% and GHG emissions intensity per unit of sales by 50.0% by 2030 (both compared with 2019 levels).

For Scope 3, by 2030 we are targeting a reduction of 30.0% versus the 2019 level in GHG emissions for categories 1, 10, 11, and 12 and have established an engagement target to encourage suppliers—who account for 50% of category 1 GHG emissions—to set targets on a par with those of the Science Based Targets initiative.

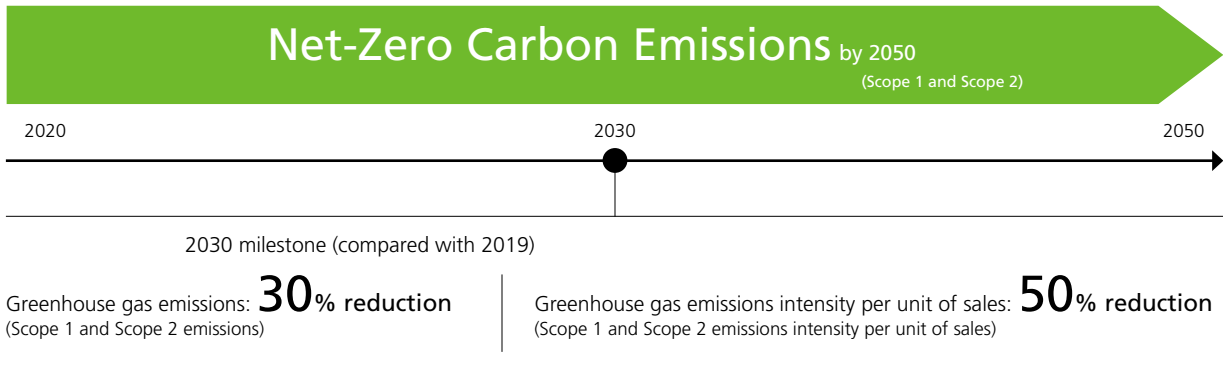
In addition, AGC aims to help society as a whole achieve net-zero carbon emissions through its products and technologies.

In terms of initiatives before 2020, in 2014 we established a GHG emissions reduction slogan of “aiming to reduce annual GHG emissions (Scope 1 and Scope 2) through

energy-conserving and energy-creating products by six times our own emissions by 2020.”

In 2019, the amount of greenhouse gases reduced as a result of our energy-conserving and energy-creating products sold that year totaled 63.7 million t-CO₂-e, 5.6 times the AGC Group's annual GHG emissions of 11.37 million t-CO₂-e (Scope 1 and Scope 2) that same year.

In addition to reducing GHG emissions, we use water consumption and cullet use as management indicators, annually monitoring and analyzing levels and our reduction initiatives.



Note: The coverage rate for GHG emissions (Scope 1 and Scope 2) reduction targets is 100% for both the base years and the target years.

Greenhouse Gas Emissions (Scope 1, Scope 2, and Scope 3)

(Thousands of t-CO₂-e)

	2019	2020	2021
Scope 1 (direct emissions)	6,081	6,594	6,986
Scope 2 (indirect emissions from purchased energy)	5,288	4,645	4,610
Scope 3 (other indirect emissions)	13,175	11,600	11,519
Total	24,544	22,839	23,114

Coverage of Scope 1 and Scope 2 emissions: AGC Inc. and its consolidated subsidiaries (a total of 133 manufacturing and non-manufacturing sites as defined by the Company's standards)

Coverage of Scope 3 emissions: AGC Inc. and its consolidated subsidiaries (a total of 238 manufacturing and non-manufacturing sites as defined by the Company's standards)

Climate-Change Related Initiatives and Other Efforts Signed or Endorsed by AGC

AGG is a signatory to or participant in the following international initiatives.



Task Force on Climate-Related Financial Disclosures



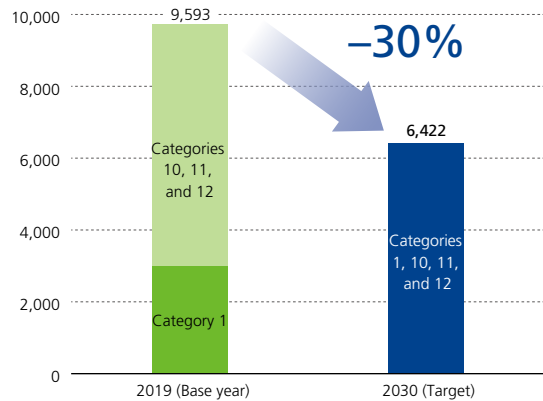
Japan Climate Initiative



Corporate member of WWF Japan

GHG Emissions (Scope 3) Reduction Targets

(Thousands of t-CO₂-e)



Greenhouse Gas Emissions: Scope 3

(Thousands of t-CO₂-e)

Category	Business activities	2019	2020	2021
1	Purchased goods and services	2,942	3,716	3,406
2	Capital goods	389	684	685
3	Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	1,776	1,102	2,264
4	Upstream transportation and distribution	1,197	1,007	1,287
5	Waste generated in operations	12	35	14
6	Business travel	19	43	18
7	Employee commuting	21	51	20
8	Upstream lease assets	NA	NA	NA
9	Downstream transportation and distribution	NA	NA	NA
10	Processing of sold products	282	269	261
11	Use of sold products	2,398	1,945	1,681
12	End-of-life treatment of sold products	3,971	2,581	1,761
13	Downstream lease assets	167	167	167
14	Franchise	NA	NA	NA
15	Investments	NA	NA	NA
Total		13,175	11,600	11,519

Scope of coverage: AGC Inc. and its subsidiaries (a total of 238 manufacturing and non-manufacturing sites as defined by the Company's standards)
Scope of calculations: Categories 10, 11, and 12 refer only to AGC Inc.

Category	Calculation method
1	The volume of resources used in conjunction with producing products multiplied by the emissions intensity* per resource
2	The amount of investment in capital goods multiplied by the emissions intensity* per investment amount
3	The amount of fuel and energy used multiplied by the emissions intensity* for each type of fuel and energy
4	The volume of emissions related to the procurement of materials and parts and the volume of emissions from transportation when shipping products, based on the volume of resources used during product production and the ton-kilometer data for product transportation, multiplied by the emissions intensity*
5	Volume of waste resulting from business activities that is processed by external service providers multiplied by emissions intensity* per method
6	Global emissions calculated based on the result of multiplying AGC business travel expenses by the emissions intensity* per transportation method, using estimates based on employee composition ratios
7	Global emissions calculated based on the result of multiplying AGC commuting expenses by the emissions intensity* per transportation method, using estimates based on employee composition ratios
8	Emissions for leased properties calculated in Scope 1 and Scope 2
9	The AGC Group does not calculate emissions from its products as they are intermediate components, such as parts and materials, which do consume energy during use.
10	Weight of sold products multiplied by the basic unit of processing per product and the electricity emissions intensity
11	GHG emissions emitted directly through the use of products sold at sales outlets multiplied by emissions intensity per product,* based on assumed use conditions
12	The weight of products sold multiplied by the basic unit per type of waste matter. For a portion of products, it is calculated by determining the volume of leakage from the weight sold and multiplying the figure by their global warming potential.
13	Leased floor space in a building multiplied by basic unit of floor space and emissions intensity*
14	Not applicable as the AGC Group does not operate franchises
15	The AGC Group does not calculate emissions from investments as it does not acquire stakes in companies for investment purposes.

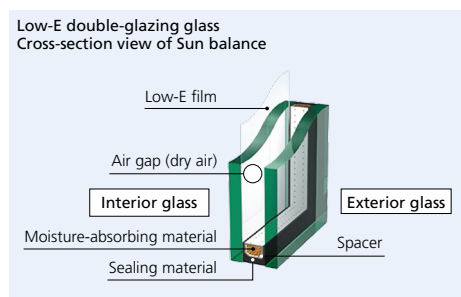
* Emissions intensities are based on the Sustainable Management Promotion Organization's life cycle assessment inventory database (Inventory Database for Environmental Analysis) and the Japanese Ministry of the Environment's database.

Products That Help Address Climate Change

Eco-Glass (Low-E Double-Glazing Glass)

▶ Improving the Energy Efficiency of Buildings through the Selective Transmission of Light and Heat

Low-E double-glazing glass, which reflects solar radiation and other far infrared rays while letting through light, has outstanding thermal insulation performance, helping enhance heating efficiency in winter.



F-CLEAN™—Fluoropolymer Resin Film for Greenhouses

▶ Supporting Agriculture through Long-Life Greenhouses

F-CLEAN™ is a fluoropolymer resin film for greenhouses. While ordinary agricultural film has a life span of between three and five years, F-CLEAN™ lasts for over 30 years without being replaced, thereby helping minimize plastic waste. With a high light transmission ratio, this film also contributes to improved productivity for agricultural products.



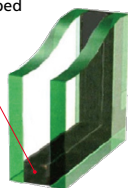
F-CLEAN™ in use at a greenhouse

Thermocline™

▶ Realizing Recyclable Double-Glazing Glass Using AGC's Unique Material

Thermocline™ is a double-glazing glass achieving durability and insulation by using a material developed by the AGC Group. In addition, as Thermocline™ allows double-glazing glass to be assembled and disassembled through a simple process, it contributes to reduced CO₂ emissions throughout its life cycle.

Requires only butyl, a sealing material developed by AGC



Simple structure of Thermocline™

AMOLEA™ Series

▶ Refrigerants and Solvents with a Global Warming Potential (GWP) Equivalent to 1/100th of Previous Products

The next-generation refrigerants and solvents of the AMOLEA™ series have an extremely low GWP.

We are proceeding with the commercialization of these products in a variety of product areas, including automobile air-conditioning systems and turbo freezers, and we plan to expand into other such areas going forward, including air-conditioning for rooms.



LUMIFLON™—Fluoropolymer Resin for Coatings

▶ Minimizing Environmental Impact by Reducing the Number of Times Recoating Is Required

LUMIFLON™ is a coating in use at various buildings, such as TOKYO SKYTREE®, Akashi-Kaikyo Bridge, and Singapore's Marina Bay Sands. LUMIFLON™ helps reduce environmental impact through lower maintenance costs as recoating is unnecessary over a period of several decades thanks to its high weatherability and corrosion-resistance performance.



Pearl River Tower



Akashi-Kaikyo Bridge



Ferrari World Abu Dhabi (United Arab Emirates)

Building-Integrated Photovoltaic (BIPV) Modules

▶ Unlocking New Possibilities for Architecture through Photovoltaic Glass

BIPV modules are a type of glass that facilitate the generation of solar power by sandwiching power generation cells between sheets of glass. These modules simultaneously create energy and maintain the aesthetic appeal of buildings while retaining the natural lighting innate to glass. Another advantage of BIPV modules is that they allow the use of existing murals and windows without installing solar panels.



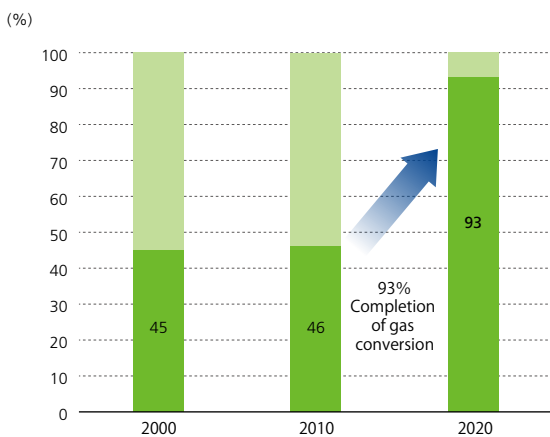
The Singapore Institute of Technology's new Punggol Campus

Initiatives Aimed at Reducing Scope 1 and Scope 2 GHG Emissions

Glass-Melting Process Innovation

The AGC Group has long been rigorously reducing CO₂ emissions by converting the fuel used by glass-melting furnaces from heavy oil to natural gas. Going forward, the Group will aim to achieve further energy savings by combining a range of technologies, such as introducing oxygen combustion methods, installing electric boosters for melting that reduce fuel consumption, and increasing the electrification of heat sources for melting, in addition to converting fuel to environmentally friendly sources of fuel. The Group can also further raise energy efficiency through a combination of its ceramics technology, which enables extremely high thermal-insulation performance, and its glass-melting technology.

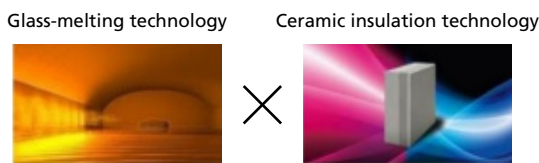
Conversion of Fuel Used by Glass-Melting Furnaces*



■ Natural gas ■ Heavy oil

* Includes float furnaces for architectural glass, automotive glass, and glass for displays

Energy-Saving Glass Manufacturing Technology



- Introduction of oxygen combustion methods
- Installation of electric boosters for melting that reduce fuel consumption
- Acceleration of the electrification of melting heat sources

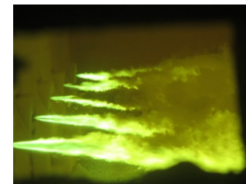
Ammonia Combustion Technology Development Project

AGC has been selected by the New Energy and Industrial Technology Development Organization (NEDO) as a contractor on a project to develop fuel ammonia combustion technology for industrial furnaces. AGC will develop this project jointly with Taiyo Nippon Sanso Corporation, the National Institute of Advanced Industrial Science and Technology (AIST), and Tohoku University from the end of December 2021 to March 2026.

The project will see the installation of an ammonia-oxygen combustion burner in the architectural glass production facility at the AGC Yokohama Technical Center to conduct demonstration tests of ammonia combustion technology. In addition to evaluating the effects of ammonia combustion on glass and the materials that comprise the melting furnace, AGC and its partners will develop a burner that can meet environmental standards with the aim of achieving its full-fledged deployment in glass-melting furnaces.



Glass-melting furnace used for demonstration tests



Inside of a glass-melting furnace

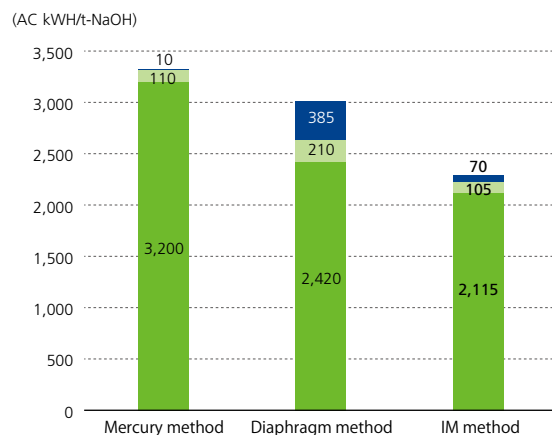
Use of Cullet (Refuse Glass)

Mixing cullet with glass materials allows glass to be manufactured with less energy than it would be when using only natural raw materials, such as silica sand.

Initiatives at AGC's Chlor-Alkali Electrolysis Facility

AGC manufactures chlor-alkali products using the ion-exchange membrane (IM) method, which it was the first to develop and which is currently used extensively around the world. The Company will aim to increase efficiency in terms of carbon emissions by continuing to improve this method in order to further reduce the amount of electricity it uses.

Electricity Consumption Intensity by Manufacturing Method



■ Electrolytic electricity ■ General electricity ■ Steam

Note: Converted based on 200kWh/t-Steam

	Manufacturing caustic soda concentration	Environmental and health impacts
Mercury method	50	Concerns over wastewater pollution caused by mercury
Diaphragm method	12	Concerns over pneumoconiosis and mesothelioma
IM method	32	Pollution free and safe

■ Reduction of Fluorocarbon Leakages (Japan)

AGC manages fluorocarbons used as refrigerants in commercial air-conditioners and refrigeration units based on the Act on Rational Use and Appropriate Management of Fluorocarbons, strengthening the operation and management of refrigeration units as well as improving the recovery of refrigerants and optimizing replenishment amounts during maintenance. Thanks to these efforts, AGC's fluorocarbon leakages came to 2,298t-CO₂ in 2020. We will continue to reduce fluorocarbon leakages by maintaining leakage prevention measures and steadily replacing aging refrigeration units with state-of-the-art units that use low-GWP refrigerants.

■ Utilization of Renewable Energy

In order to further increase its adoption rate of renewable energy, the AGC Group has established a Groupwide review system and is working on examining the adoption of renewable energy based on maintaining stable manufacturing.

In 2020, AGC Plibrico Co., Ltd., switched to using electricity from renewable energy sources at its Chigasaki Plant. The electricity plan entered into by the plant makes use of non-fossil-fuel energy certificates with tracking information.

In addition, the electricity used at the Shin-Marunouchi Building, where AGC's head office is located, is provided by Tokyo Electric Power Company Holdings, Incorporated, under an electricity rate plan deemed to be 100% hydroelectric (CO₂-free electricity).

Initiatives Aimed at Reducing Scope 3 GHG Emissions

Companies are increasingly expected to make particular efforts toward reducing Scope 3 GHG emissions from their products during use and disposal in the value chain. Given such expectations, the AGC Group has been working to achieve its Scope 3 emissions reduction targets in several ways, such as devoting efforts to popularizing the next-generation refrigerants and solvents of the AMOLEA™ series, which have an extremely low GWP, and strengthening supplier engagement activities.

■ AMOLEA™ Series of Environment-Friendly, Next-Generation Refrigerants

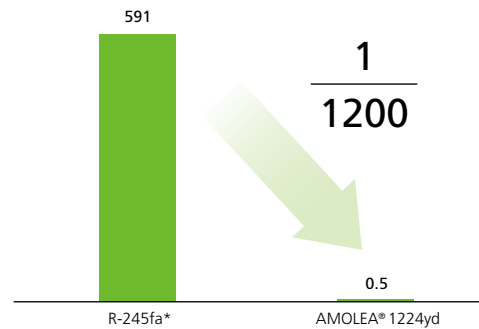
With a low GWP, the products in the AMOLEA™ series help reduce GHG emissions during processing, use, and disposal.



AMOLEA® 1224yd

● GHG Emissions from Leakage into the Atmosphere During Processing, Use, and Disposal

(t-CO₂-e/ton)



* Refers to AGC's existing products

■ Internet of Things-Enabled Pallets for Transporting Glass

As the physical distribution of glass entails significant CO₂ emissions, AGC deploys highly efficient logistics using special pallets. We are putting the location information of these pallets to practical use by inserting a special device into them that emits radio waves.



Fitted logistics trackers on 1,400 large pallets

Enables visualization of location information, travel history, and stoppage information

Responding to Physical Risks

Mitigating water risks is one aspect of the AGC Group's response to climate change. At meetings of the Strategy Meeting for Climate Change, which is led by the Sustainability Division, responses to water risks are reported in a timely manner while issues affecting management and measures to resolve such issues are brought before the Sustainability Committee, which is chaired by the CEO.

As water risks vary by region, the AGC Group comprehensively assesses regional water risks based on the results of assessments at each of its sites using the World Resources Institute's Aqueduct* tools while taking into account various factors, such as past water damage, previous issues, whether or not equipment for dealing with emergencies has been installed, and the level of business continuity planning. The Group implements countermeasures tailored to the distinctive features of regions based on such assessment results. These countermeasures include installing water storage tanks at sites with a high risk of drought, relocating emergency power generation facilities from basements to the second floor or higher at sites with a high risk of floods, and installing drainage pumps at sites with a high level of storm surge risk.

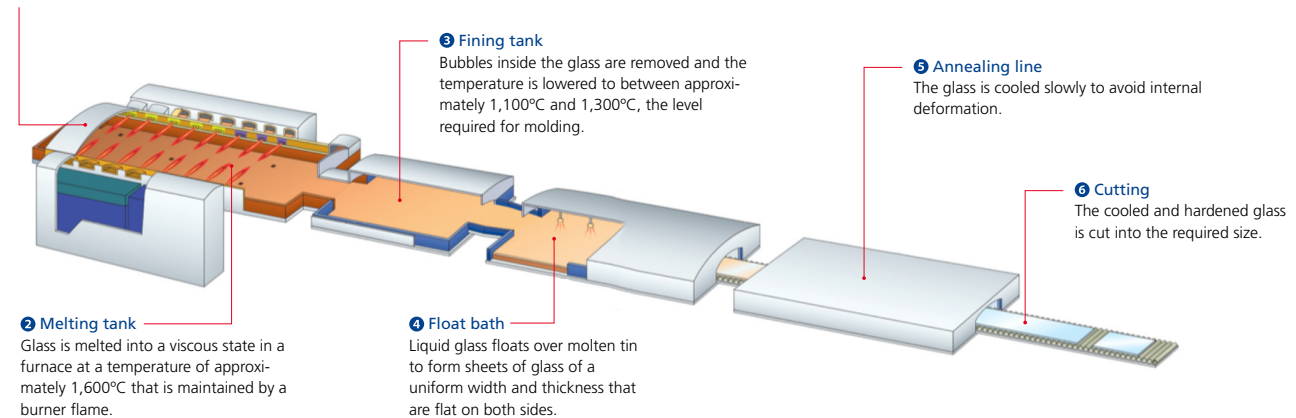
We are committed to implementing countermeasures by 2025 at all sites where we have identified high water risks.

* Globally used tools for identifying region-specific water risks

Initiatives for Reducing CO₂ Emissions Resulting from Glass Melting

1 Slots for feeding raw materials

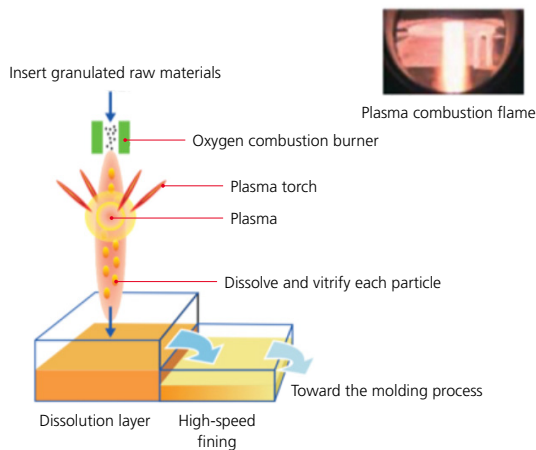
Glass raw materials, prepared by mixing silica sand, soda ash, dolomite, and other materials, are fed into a melting tank.



Glass Production Process (Float Method)

The major environmental impacts associated with glass production result from two processes: the process of using a burner to melt raw materials, such as silica sand and soda ash, in order to cause a chemical reaction and form glass; and the process of melting the glass for many hours in a melting tank to create homogenous glass with no air bubbles. These processes require large melting tanks several tens of meters in length to be kept at a high temperature for many hours.

How In-Flight Melting Works



Fuel Conversion

The AGC Group has begun converting fuel at a portion of its facilities to replace heavy oil, which is used in processes including glass melting, with natural gas. Natural gas emits approximately 20% less CO₂ than heavy oil during combustion. In addition, using natural gas reduces sulfur oxide (SO_x) emissions, as such emissions arising from fuel are virtually zero.

Total Oxygen Combustion

The total combustion method uses only oxygen for fuel combustion to produce glass. This method improves energy efficiency as it does not heat nitrogen, which accounts for approximately 80% of air and is not required for combustion. In addition, given that combustion gas contains almost no nitrogen, this method also helps reduce nitrogen oxide (NO_x) emissions.

All-Electric Melting


All-electric melting is a method by which electric current is applied directly to glass materials to melt them, making it suitable for relatively small furnaces. This method improves energy efficiency as materials are heated directly rather than heated and melted by the heat radiated from combustion flames.

In-Flight Melting

In-flight melting is a method for melting glass materials using plasma combustion flames that can reach up to 10,000°C. This method enables the instant completion of the melting process, which consumes a large amount of energy. Granular materials with a pre-adjusted composition are injected into the furnace from above, passing through between electrodes to be instantly melted by plasma combustion flames. We expect to halve CO₂ emissions from glass manufacturing by changing the glass manufacturing method through in-flight melting. We will also be able to reduce the size of melting tanks to a width of several meters.

Information Disclosure through the CDP

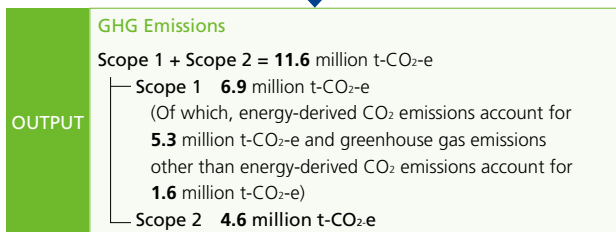
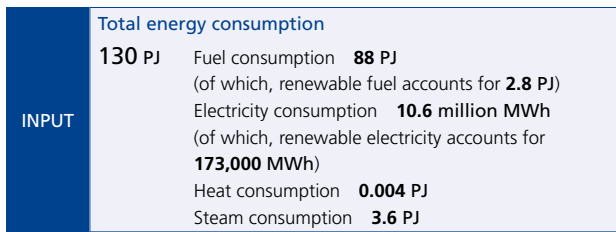
The AGC Group has been completing the CDP's climate change questionnaire since 2011. The Group's responses to the questionnaire can be viewed here.

 [CDP Climate Change 2022](#)

GHG Emissions Data

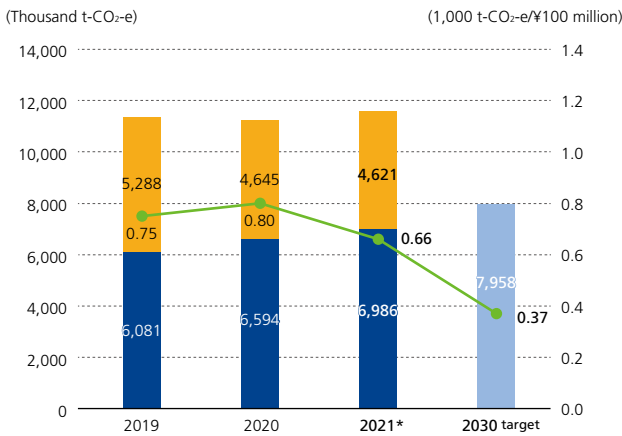
The AGC Group's Energy and Material Balance (2021)

The AGC Group uses heavy oil, natural gas, city gas, hydrogen, and coal as direct energy, and electricity, steam, and heat as indirect energy.



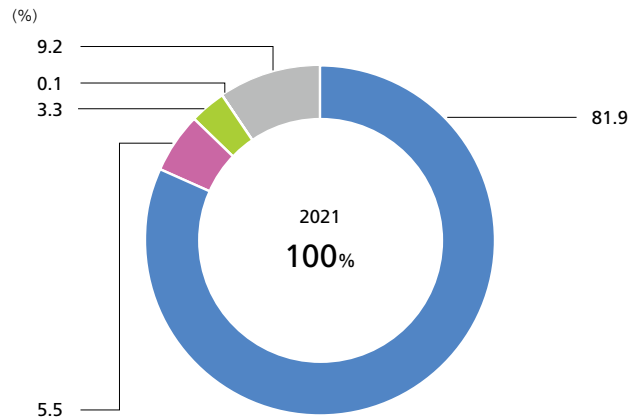
Note: GHG emissions were calculated using the market-based method.

GHG Emissions (Scope 1 and Scope 2) and Emissions Intensity per Unit of Sales (Market-Based Method)



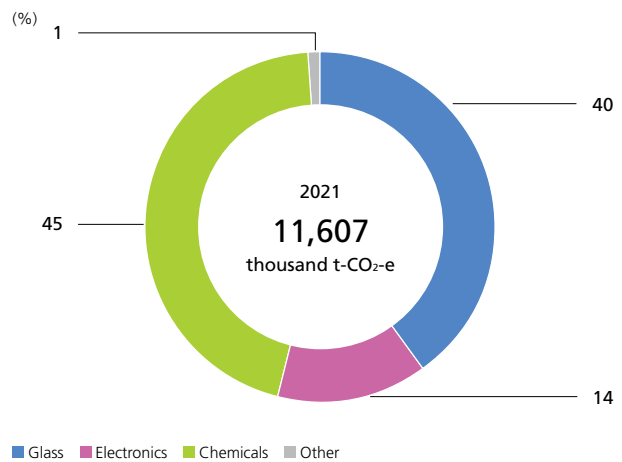
Note: 11.6 million t-CO₂-e when calculated using the location-based method

Adoption of Renewable Energy

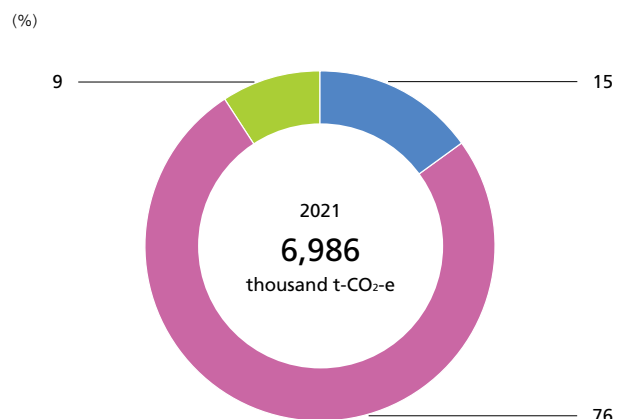


Notes 1. 152,432 MWh of purchased electricity + 21,181 MWh of electricity generated and consumed by AGC
2. Renewable energy adopted by the AGC Group is derived by using solar power generation equipment, electricity from renewable energy sources utilizing a 100% non-feed-in tariff scheme, non-fossil-fuel certificates designated as renewable energy (Japan), and a renewable energy integrated power grid.

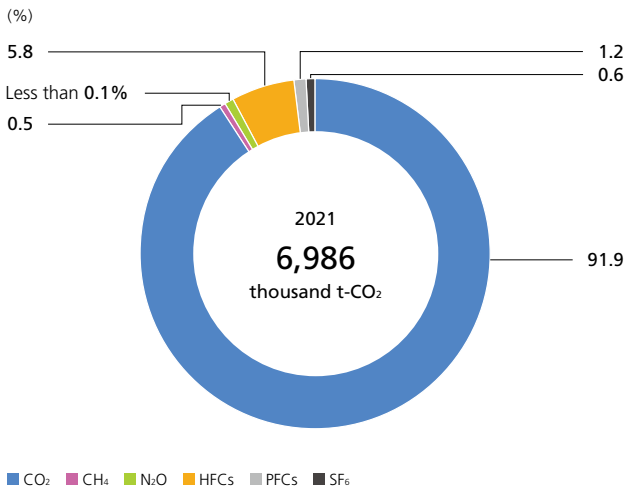
Greenhouse Gas Emissions (Scope 1 and Scope 2) by Business Segment



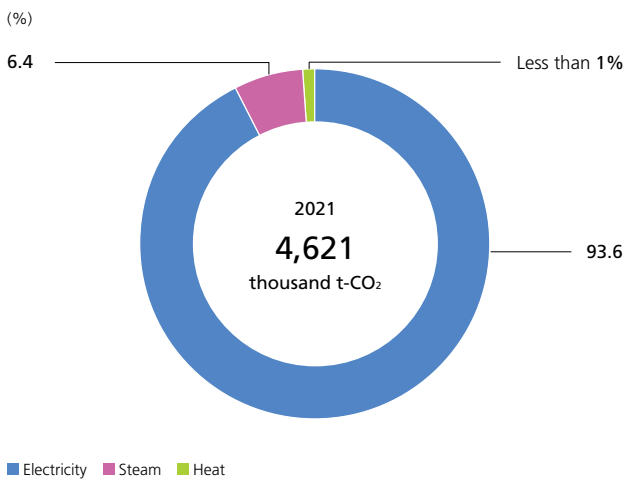
Breakdown of GHG Emissions (Scope 1)



● Breakdown of GHG Emissions (Scope 1)



● Breakdown of GHG Emissions (Scope 2)



■ Calculation Terms for GHG Emissions and Other Environmental Impacts

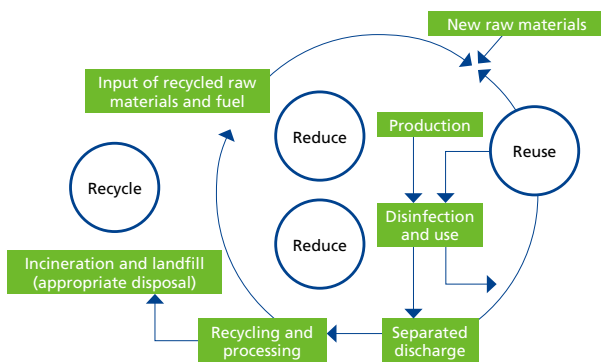
- Values reported by the AGC Group's environmental database system in fiscal 2021 (January 1, 2021 to December 31, 2021)
- AGC on a non-consolidated basis and its subsidiaries (excluding subsidiaries and equity-method companies) are included in the scope of calculations. The scope of other detailed calculations is in accordance with the AGC Group's Environmental Performance Data Guidance, which is based on the Greenhouse Gas Protocol.
- Thermal units and emission factors used in Scope 1 and Scope 2 calculations are based on the Act on Rationalizing Energy Use, the Act on Promotion of Global Warming Countermeasures, and the Environmental Protection Agency's Greenhouse Gas Reporting Program.
- Electricity emission factors used in Scope 1 calculations use emission factors by electricity utility operator and factors stipulated by the International Energy Agency and the governments of various countries.
- The global warming potential of greenhouse gases other than CO₂ uses the values in the Intergovernmental Panel on Climate Change's Fourth Assessment Report.
- Emission factors for chlorofluorocarbon with greenhouse gas effects not specified in the Act on Promotion of Global Warming Countermeasures use values stipulated by AGC based on technical literature.
- AGC and the 310 sites of 133 consolidated Group subsidiaries in Japan and overseas are included in the scope of calculations of Scope 1 and Scope 2. Subsidiaries and equity-method companies are excluded.
- Actual values prior to 2020 differ from values disclosed in previous years improvements in the accuracy of data and other factors.
- When contracts and other documents confirm the market-based method, the market-based factor is used in calculations. In any other cases, the location-based method is used.
- Scope 3 calculations are based on the IDEA v3 v3.1.0 and the Ministry of the Environment's database v3.1.

Effective Use of Resources

Fundamental Approach

The raw materials of the AGC Group's products include silica sand and other natural resources and such industrial materials as ethylene. To effectively utilize the planet's finite resources and achieve growth that is both economically and socially sustainable, we will build resource circulation loops at every phase of our business activities by rigorously implementing existing reduce, reuse, and recycle (3Rs) initiatives; by introducing new recycling initiatives; and by increasing resource productivity* in all aspects of operations, including packing materials.

* An index that comprehensively indicates how effectively resources are being used. The index is calculated as the ratio of the volume of natural resources and energy used to the production amount and economic value generated therefrom.



Targets for the Effective Utilization of Resources

The AGC Group is targeting zero waste emissions* globally by advancing waste recycling based on the laws and regulations of each country and region, reducing waste generation, and separating and collecting waste thoroughly.

* Zero waste emissions are defined as a landfill disposal percentage that is less than 1.0% of the total volume of waste generated (waste materials + Valuable materials).

In addition, we have set targets for the utilization percentages^{*1} of recycled resources,^{*2} and we are promoting initiatives to utilize collected used products as recycled resources.

To achieve these targets, each in-house company sets waste generation targets and conducts management based on annually set key performance indicators.

*1 Recycled resources as a percentage of the raw materials used in products

*2 Used products and waste that are useful and can be used as raw materials

Initiatives for the Effective Use of Resources and the Appropriate Disposal of Waste

Initiatives for Recycling Plastic Resources

For many years, we have curbed waste plastic emissions, separated waste, and recycled waste plastics that we generate for use as solid fuels and cement raw materials as well as for use in heat recovery.

In response to society's increasing concern over plastic-related issues in recent years, we are establishing a more in-depth understanding of the recycling of the waste plastics discharged by us in Japan and stepping up information sharing between materials-related departments and environment-related departments. In addition, to reduce our use of plastics derived from fossil resources, we have begun activities to replace auxiliary materials, such as office supplies and packaging materials used in-house, with materials derived from plants and other non-fossil resources or with products containing recycled plastics.

Going forward, we will reduce the use of plastics derived from fossil resources, lower the emissions of waste plastics, and increase recycling.

Targets for the Effective Utilization of Resources Use of Cullet (Refuse Glass)

In the glass manufacturing process, the AGC Group uses cullet as a substitute for raw materials such as silica sand. We reduce our use of natural resources by using glass ends generated during the manufacturing process and refuse glass from urban centers for reuse as a raw material as much as possible. In addition, we are carrying out an initiative aimed at recycling cullet by examining ways to separate parts used from not only single sheets but also laminated glass.

Further, we use cullet as a raw material for display glass, which must be of particularly high quality. Most types of display glass are coated, and cullet generated from coated glass is generally difficult to utilize as a recycled resource because the coating material affects quality. Nonetheless, based on strict quality control, AGC uses cullet generated from coated glass as a recycled resource. Also, labeling that shows the percentages of recycled materials in our products is in accordance with ISO 14021 and has acquired third-party certification.

Recycling of Fluorine Products

The AGC Chiba Plant collects used fluorine film from the market and sells it as a valuable material to specialized contractors, who recycle the film into plastic products.

■ Initiatives to Reduce Waste Generation

Returnable Glass Pallets Used for Transporting Glass Products

We use glass pallets utilizing returnable carriers made of iron when transporting glass products. In 2020, we introduced a pallet (Internet of Things) IoT system, a location management system for pallets, with the aim of ensuring the recovery of pallets and increasing the efficiency of their transportation.

Reusable Steel Stillages

For many years, AGC Glass Europe S.A. has been implementing measures for steel cages for glass and packaging boxes pursuant to European Directive 94/62/EC, which includes stipulations on packaging waste.

By utilizing stillages returned from customers, we maximize the reuse thereof. As stillages can be reused for years, they allow us to minimize packaging waste. Our operations in Belgium reuse 98.0% of stillages.

For details, please visit the website below.

 [Packaging | AGC Glass Europe](#)

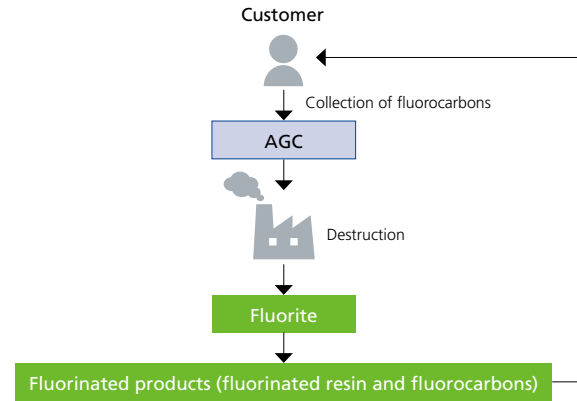
Recovery and Recycling of Fluorocarbons and Calcium Fluoride

In the Chemicals Segment, the AGC Group manufactures various fluorinated products such as alternatives for hydrochlorofluorocarbons (HCFC and HFC) and hydrofluoric acid. Calcium fluoride (fluorite) is a natural resource used as a raw material for these fluorinated products, but deposits and producing countries are limited, and most Japanese enterprises, including the AGC Group, depend on imports from China.

Since 1997, the AGC Group (Japan) has been recovering used fluorocarbon products from customers and then destroying and recycling them at the AGC Chiba Plant. In recognition of these activities, the Group received the Minister of Economy, Trade and Industry Award in the Awards for Resources Recirculation Technologies and Systems in 2014 in Japan. In 2020, fluorocarbons equivalent to approximately 1.15 million tons of CO₂ (approximately 1.40 million tons in 2018) were recovered, and the calcium fluoride obtained through the destruction process was reused as raw material.

Also, at the same plant calcium fluoride (fluorite) is recovered and reused from waste fluid generated in the manufacturing process. Furthermore, after customers use hydrofluoric acid in the wastewater treatment process, the Group recovers and reuses the waste calcium fluoride generated.

● Recovery and Recycling of Fluorocarbons



Refractories (AGC Plibrico)

AGC Plibrico Co., Ltd., promotes an initiative for recycling refractories (bricks and other materials) used in blast furnaces and other applications at steelworks—its major customer—for reuse as raw materials for refractories. In cooperation with its customers, AGC Plibrico is working to reuse refractories as an aggregate raw material for monolithic refractories by removing impurities from refractories soon to be disposed of that are used at steelworks and by recovering a granular material after crushing and pulverizing them. Previously, used refractories would be buried as waste or diverted to another use; however, by reusing them as a raw material for refractories, we are not only contributing to waste reduction but also helping reduce disposal and raw material procurement costs. We will continue to proactively contribute to the creation of a recycling society by recycling used products.

Initiatives to Reduce Hazardous Waste

AGC's Kashima Plant is significantly reducing specially controlled industrial waste by using boilers to combust waste oil that contains hazardous oxidizing agents. Moreover, exhaust heat from this process is recovered and used as a source of energy.

Further, the Group's Chiba Plant helps reduce the amount of hazardous waste in society by collecting and destroying used fluorocarbons. The technology we use for recovering and recycling fluorocarbons earned the Minister of Economy, Trade and Industry Award at the Resource Recycling Technology and System Awards in 2014.

■ Targets for the Effective Utilization of Resources Initiatives Tasked with the Appropriate Disposal of Waste

As sites that dispose of waste, the AGC Group's bases in Japan meet the responsibilities that they have to monitor the generated industrial waste until the completion of its disposal by confirming the status of disposal through on-site inspections of waste disposal service providers. These measures are pursuant to the Waste Management and Public Cleansing Act. The Groupwide goal is to conduct on-site inspections of all waste disposal service providers over a three-year period. AGC plants that are geographically close to waste disposal service providers cooperate by conducting on-site checks and sharing the results of these checks.

Since fiscal 2020, we have changed certain plans due to the COVID-19 pandemic.

Proper Management and Treatment of PCBs

The Stockholm Convention on Persistent Organic Pollutants calls for the use of equipment containing PCBs to be discontinued by 2025 and for such equipment to be disposed of by 2028. The AGC Group is advancing the discontinuation and disposal of equipment containing PCBs in accordance with the laws and regulations of each country in which it operates. AGC and the AGC Group's sites in Japan ended their use of electric devices using high-concentration PCBs in 2005 and 2009, respectively. At present, these devices are stored according to the relevant legislation and their treatment, which is entrusted to the Japan Environmental Storage & Safety Corporation (JESCO), has been progressing. Furthermore, the AGC Group will continue to systematically dispose of low-concentration PCBs.



Storage area for PCB waste (Yokohama Technical Center)

■ Products That Contribute to the Effective Use of Social Resources

DA CAPO

A skin care cosmetic for sensitive skin produced by Hokkaido Soda Co., Ltd., DA CAPO includes chitosan extract, a moisturizing ingredient that the company manufactures by recycling the shells of crabs caught in the seas around Hokkaido.

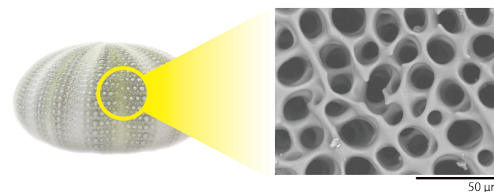
🌐 [CONCEPT | DA CAPO | Tomakomai-City](#)

A Biological Filter Material Effectively Utilizing Discarded Sea Urchin Shells (Hokkaido Soda Co., Ltd.)

In March 2020, AGC Group company Hokkaido Soda Co., Ltd., began sales of a product called "uniporous," a biological filter material that effectively utilizes sea urchin shells. The annual catch of sea urchin in Hokkaido is about 4,300 tons, but only about 15% of that is edible flesh, and it takes much time and effort to process the sea urchin shells, which account for most of the waste.

Based on the management policy of the AGC Group, Hokkaido Soda aims to solve this social issue through science and technology cultivated over many years. With cooperation from the Fisheries Research Department of the Hokkaido Research Organization, Hokkaido Soda has commercialized a biological filter material that takes advantage of the light-weight, porous structure of the sea urchin shell, creating a highly adherent surface for bacteria.

This product was recognized for its high level of recyclability as a Hokkaido Certified Recycled Product in November 2019.

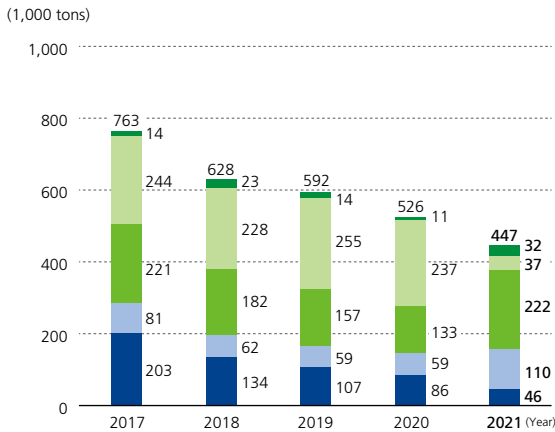


Porous sea urchin shell, which is effective as a biological filter material

Related Data

Data on waste and resource use has been collected through the AGC Group's environmental performance data system.

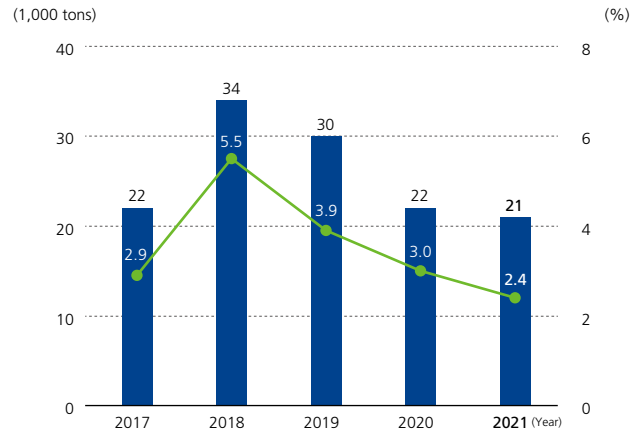
Total Volume of Waste Generated by Region



■ AGC ■ Group companies in Japan ■ Group companies in Asia
■ Group companies in Europe ■ Group companies in the Americas

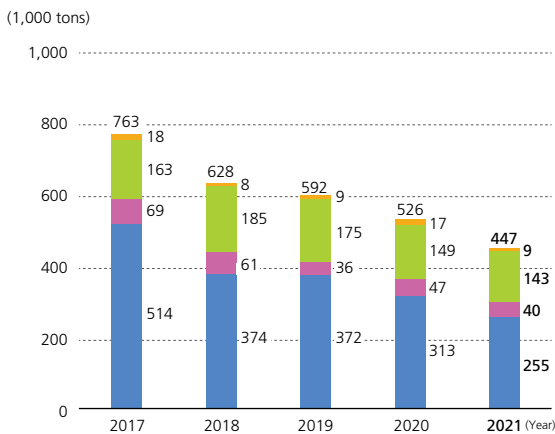
Note: Until 2020, valuable materials were included in the results figures of certain regions. From fiscal 2021 onward, only the volumes of generated waste materials are presented.

Landfill Volume and Landfill Percentage



■ Landfill volume ● Landfill percentage

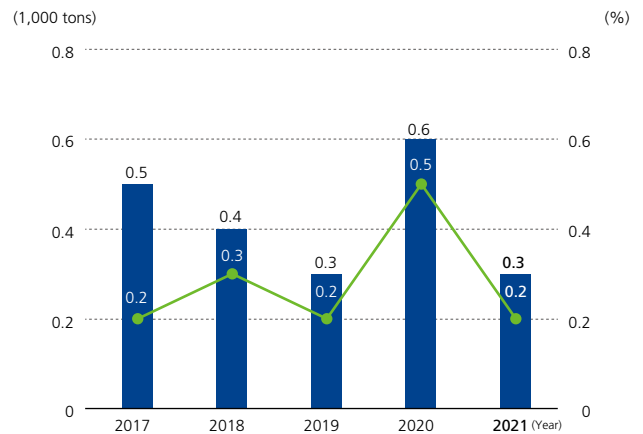
Total Volume of Waste Generated by Business



■ Glass ■ Electronics ■ Chemicals ■ Other

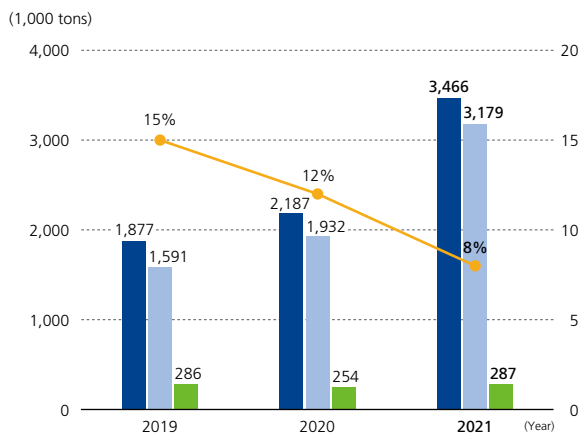
Note: Until 2020, valuable materials were included in the results figures of certain regions. From fiscal 2021 onward, only the volumes of generated waste materials are presented.

Landfill Volume and Landfill Percentage (AGC Non-consolidated)



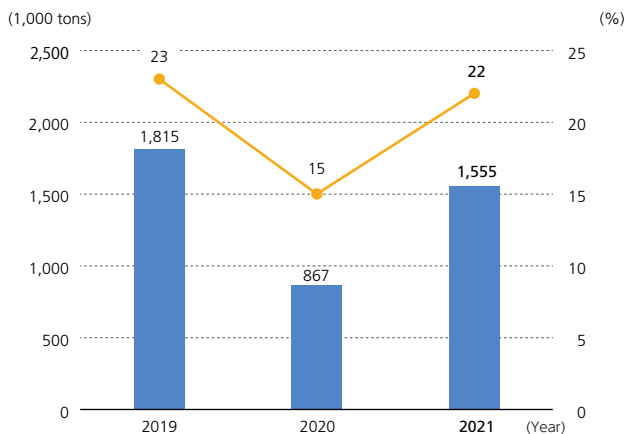
■ Landfill volume ● Landfill percentage

Plastic Waste Generation Volume and the Landfill Percentage of AGC and Domestic Affiliated Companies in Japan



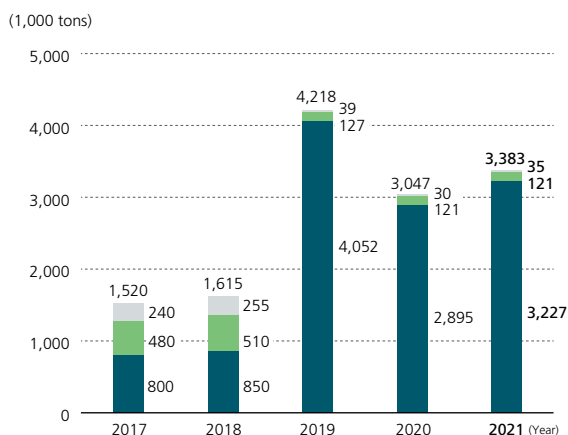
■ Plastic waste recycled volume
 ■ Plastic waste landfill disposal percentage
■ Plastic waste landfill disposal volume
 —●— Plastic waste generation volume
 Note: Plastic waste does not include plastic waste that is converted into valuable materials.

Percentage of Recycled Glass Raw Materials



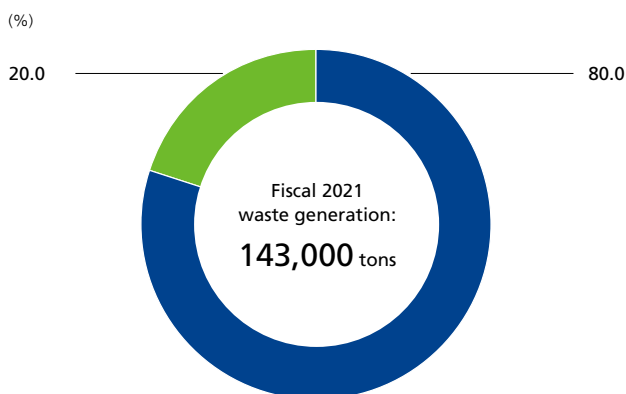
■ Recycled volume
 —●— Recycled percentage
 Note: Recycled volume ÷ (Recycled volume + Mineral-derived resources (new input))
 Recycled resources: Recycled cullet (pre-consumer recycled materials), recycled cullet (pre-consumer recycled materials), and recovered salt cake

Resource Input for Main Glass Raw Materials



■ Silica sand
 ■ Limestone
 ■ Salt cake

Hazardous Waste Generation (Chemicals Company Only)



■ Hazardous waste
 ■ Non-hazardous waste

Note: The Chemicals Company in Japan, other parts of Asia, and the Americas

Conservation of Natural Capital and Biodiversity

Fundamental Approach

The soundness of natural capital, including biodiversity, is indispensable for daily life and our business activities. As the conservation of natural capital and conservation of biodiversity mutually affect each other, we view them as being synonymous. All global environmental problems, such as climate change, water issues, resource depletion, and environmental pollution, have a negative impact on biodiversity. Therefore, we believe that minimizing the environmental impact of all phases of value chains directly contributes to the conservation of natural capital and, as a result, conserves biodiversity.

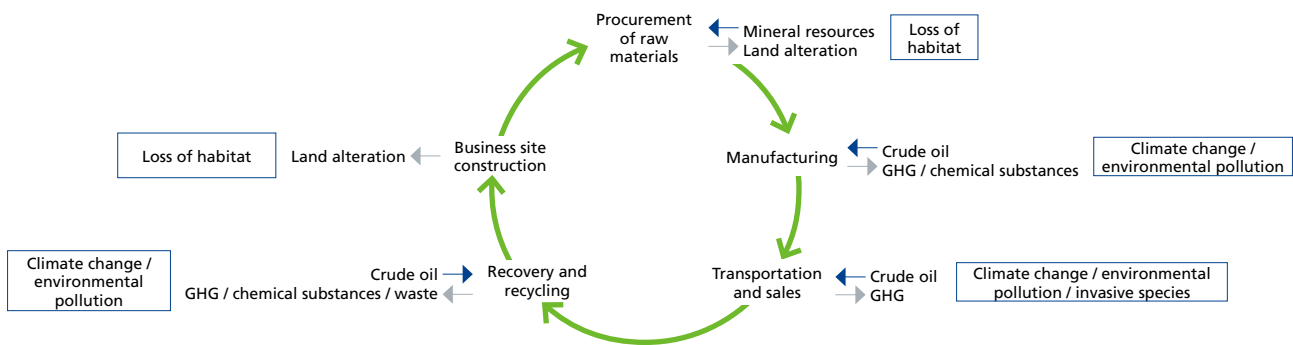
Currently, we are creating a system to identify and qualitatively and quantitatively evaluate impacts on natural capital in our value chains.

Management Structure

As the full involvement of senior management is essential to realizing highly effective and practicable activities for the conservation of natural capital, we have included among the responsibilities of the CTO environmental management and the supervision of natural capital conservation activities, including various water issues, resource depletion, environmental pollution, and biodiversity. In addition to mitigating the negative impact on natural capital of our own activities, we will examine the possibility of reducing negative impacts and creating positive impacts more broadly through collaboration with all our stakeholders.

If such environmental initiatives significantly affect the Company and its stakeholders, reports and proposals are submitted to the Sustainability Committee, which meets quarterly under the supervision of the Board of Directors.

Relationship between the Value Chain and Impacts on Nature



Initiatives for Biodiversity Conservation

To ensure all employees are aware of biodiversity conservation and practice it in their daily activities, we have established the AGC Group Environment Policy, which states that we are “committed to contribute to the creation of a sustainable society as an outstanding player in the global materials industry” and that we will achieve this “by taking into account our impact on the natural environment, including climate change and biodiversity.”

Further, we have formulated Considerations for Biodiversity as guidelines on reducing or avoiding the impact of business activities on biodiversity at each site. Other initiatives include our preparation of the AGC Group Integrated Green Procurement Guidelines, which call for the procurement of raw materials, components, and products that have lower environmental impacts.

Affiliation with the Roundtable on Sustainable Palm Oil

With the large-scale development of oil palm plantations, environmental problems such as deforestation of tropical rainforests and CO₂ emissions from peat areas, as well as forced labor and child labor of plantation workers have become global issues. In 2020, the Chemicals Company joined the Roundtable on Sustainable Palm Oil (RSPO), a non-profit organization that promotes sustainable palm oil production and use. To support the use of sustainable palm oil in value chains, our subsidiary, Advanced Biochemical (Thailand), which produces bio-based Epichlorohydrin (ECH) has been certified by RSPO Supply Chain Certification (RSPO SCC) standard under Mass Balance model. This model allows for mixing of RSPO and non-RSPO certified palm-based products at any stage in the supply chain. Thus, we can offer RSPO certified bio-based ECH, which is derived from sustainable palm-based glycerine and delivered to downstream users under a credible and transparent tracking system.

 [The AGC Group Integrated Green Procurement Guidelines](#)

■ Conversion of Cullet into Artificial Silica Sand

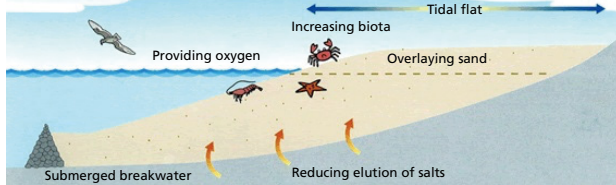
During manufacturing processes, the glass business generates glass waste called cullet. Cullet is mainly recycled as a raw material for asphalt. However, by converting cullet into artificial silica sand, the AGC Takasago Factory is helping regenerate tidal flats through the creation of artificial tidal flats.



Cullet

Pulverized cullet

With the decrease in the number of tidal flats and a renewed appreciation of their value, many regions have begun attempts to regenerate their tidal flats in recent years. One method of regeneration is the creation of artificial tidal flats, which are designed to cover the seabed with clean sand to reduce the elution of nutrient salts from the seabed, supply oxygen that purifies water, and restore biodiversity.



Source: The Fisheries Agency website (Japanese only)

To use cullet as silica sand for tidal flats, the removal of sharp edges so that people and animals can step on it without being injured and conformity with standards on water-bottom sediment are necessary. Therefore, the cullet that the Takasago Factory generates is only used in artificial tidal flats after being made edgeless through the use of a milling machine and passing elution tests.

■ Conservation of Wild Orchids

Golden, silver, and sword-leaved helleborine orchids grow naturally on the grounds of the AGC's Yokohama Technical Center. As endangered species, these orchids have been included in the red lists of the Ministry of the Environment, Kanagawa Prefecture, and other prefectures. Although the coastal areas are not the natural habitat of the orchids, we aim to look after them carefully given their status as local assets whose annual flowering attracts visitors and because of the scarcity of green spaces in Yokohama. Accordingly, under the guidance of external experts, our employees weed out invasive species and perform other maintenance tasks in the area.

Golden orchid: Designated as vulnerable in the Ministry of the Environment's Red List 2020 and Kanagawa Prefecture's Red List 2020

Silver orchid: Designated as critically endangered, vulnerable, and near threatened in the red lists of 39 prefectures

Sword-leaved helleborine orchid: Designated as vulnerable in the Ministry of the Environment's Red List 2020 and Kanagawa Prefecture's Red List 2020



■ Engagement with Ecologically Protected Areas

As nature conservation areas are at the core of ecosystem protection, we must protect these areas and pass on their value to future generations. Accordingly, we regularly confirm and categorize the status of protected areas within a 10-kilometer radius of 270 manufacturing and non-manufacturing bases in Japan and overseas. In these activities, we gather information on Japan and other countries concerning their key biodiversity areas, which are included in the World Database on Protected Areas, as well as information regarding species on the International Union for Conservation of Nature Red List by using open data in Japan and the Integrated Biodiversity Assessment Tool. Going forward, we will not only identify protected areas and species but also evaluate whether our business activities affect them.

📍 Number of Protected Areas and IUCN*1 Red List Species within 10 Kilometers and within 50 Kilometers of AGC Group Bases

	Within 10 km			Within 50 km
	Protected areas	WDPA*2	KBA*3	IUCN Red List species, etc.
Asia	127	124	77	134
Europe	102	100	60	104
Americas	15	15	8	14

*1 International Union for Conservation of Nature

*2 World Database on Protected Areas

*3 Key biodiversity areas

📍 Number of Species on the IUCN Red List and Domestic Conservation Lists in Areas within 50 km of AGC Group Bases

Critically endangered	265 species
Endangered	650 species
Vulnerable	1,050 species
Near threatened	1,006 species

■ Initiatives for Species Conservation

Vinythai Public Company Limited participates in a coral cultivation project. Aimed at protecting marine and coastal resources, this project helps propagate coral by using polyvinyl chloride pipes manufactured by Vinythai.



Coral propagation using polyvinyl chloride pipes

Initiatives to Address Water Issues

Water is a very important resource for our businesses. Annually, the Group draws approximately 900 million cubic meters of water for production processes. In addition to improving the efficiency of our water use, we are actively developing technologies and new products that help in the use and purification of water.

■ Water Pollution Prevention Initiatives and Targets

At our manufacturing sites, we not only comply with statutory regulations and local agreements on the levels of water pollutants in wastewater but also apply voluntary standards that are stricter than statutory standards and optimize our wastewater treatment capacity to reduce the pollutants in water emissions.

■ Assessment of Water Pollution and Water Risks

Water shortages are caused by a combination of factors, including climate change, destruction and pollution of water sources, and increased demand due to population growth and industrial development. With particular focus on the impact of floods, storm surges, and water shortages associated with climate change, we comprehensively assess water risks through evaluations of all business bases in light of the ubiquitous water risks in their respective regions. These assessments of ubiquitous water risks are made possible by Aqueduct, which is provided by the World Resources Institute (WRI). Our comprehensive assessments also refer to the actual record of past water-related disasters and issues, the presence or absence of emergency response equipment, and the establishment of business continuity plans. Based on the evaluation results, we take appropriate countermeasures at business sites where water risks have been identified.

■ Water Shortage Prevention Initiatives and Targets

For each business site, we assess the water shortage risk by obtaining current drought risk information from the WRI Aqueduct Water Risk Atlas and then assigning the base an accident and emergency risk grade. We use the results of this baseline assessment in predicting the future impacts of climate change. Specifically, we generate four scenarios by projecting to 2055 and to 2090 and by using two future rates of change in annual precipitation, namely, those of the RCP 2.6 scenario and the RCP 8.5 scenario of the supplementary material of the Intergovernmental Panel on Climate Change's R5 Atlas of Global and Regional Climate Projections. In Japan and the Americas, the risk of water shortage is relatively low but cannot be completely ruled out. Meanwhile, relatively high risks of water shortages associated with climate change have been identified mainly in Europe and the Middle East.

Since water shortages could lead to a rise in water resource prices, the introduction of water resource taxes, and the suspension of operations due to the introduction of water intake regulations, we are implementing measures tailored to the characteristics of the region in question, such as installing water storage tanks at business sites where the risk of water shortages has been identified. For business sites with high levels of water risk, we aim to achieve a 100% implementation rate of countermeasures by fiscal 2025.

In addition, at business divisions and business sites where the risk of water shortages cannot be ruled out, we set targets for reducing water consumption and decide on further measures based on the results of regular monitoring. Also, to reduce water intake, we control the quality of the cooling water used for chemical equipment so that the water can be reused in a cascade.

■ Products Contributing to Effective Use of Water

One example of our contributions to the resolution of water-related issues is the manufacture and sale of sodium hypochlorite. As well as helping provide safe and secure drinking water to people all over the world, sodium hypochlorite enables appropriate sewage treatment, thereby contributing to the environmental conservation of rivers and other waterways into which wastewater is discharged. In addition, through the production of ion-exchange membranes and the sale and licensing of technology in processes that utilize them, we facilitate the creation of drinking water from water containing salt and the reuse of wastewater by purifying it through small-scale installations in developing countries.

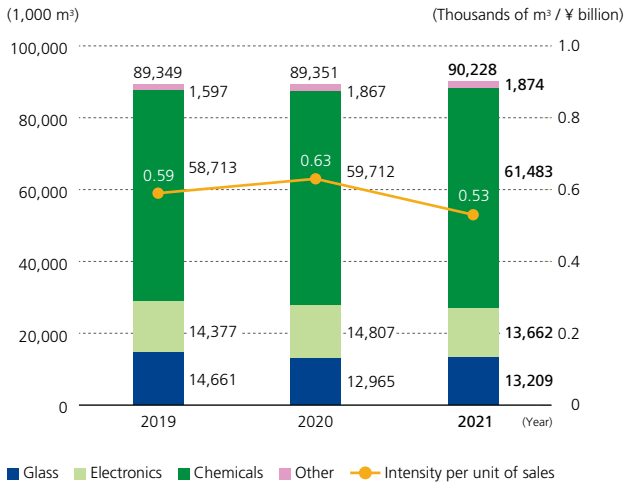
🌐 [CDP Water Security 2022](#)

Major Measures Implemented in Fiscal 2021

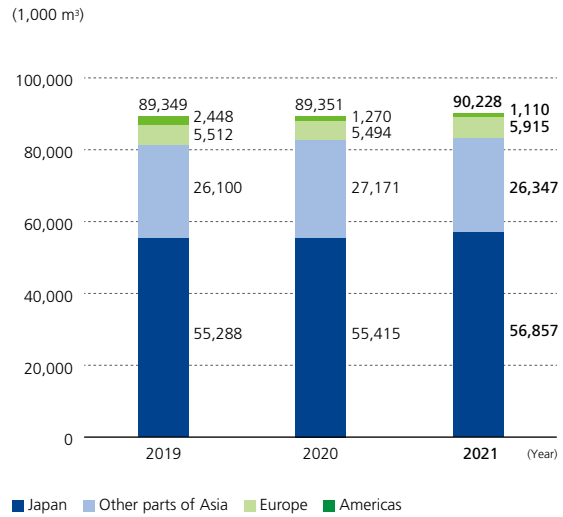
Base location	Measure	Target of reduction	Reduction volume
China (Shenzhen)	Water recycling	Water use	25.0% reduction
South Korea (Chungcheongbuk-do)	Water recycling	Water use and discharge	15.0% reduction in intake and discharge of industrial water
Japan (Ibaraki)	Optimization of saponification tray open area ratio	Water discharge	1,900 m ³
Mexico (San Luis Potosi)	Water pump standardization	Water intake	1,500 m ³ per month
Thailand (Chonburi)	Reuse of brine	Water intake	9,690 m ³
Thailand (Rayong)	Reuse of process wastewater	Water intake	219,000 m ³
United States (Hillsboro)	Optimization of water neutralization frequency optimization piping	Water intake	4,200 L
United States (Elizabethtown)	Improvement of water softening device efficiency	Water intake	Improvement in intensity
Indonesia (Anyer)	Reuse of process wastewater	Water intake	39,600 m ³
United Kingdom (Thornton-Cleveleys)	Optimization of exhaust gas treatment process	Water pollutants	Improvement in concentration

Related Data

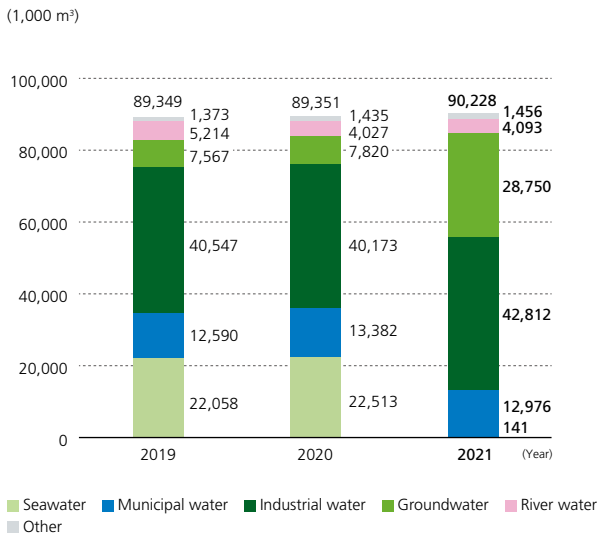
Water Intake and Intensity per Unit of Sales by Business Segment (excluding seawater for cooling on-site power generation facilities utilized by the Chemicals Company)



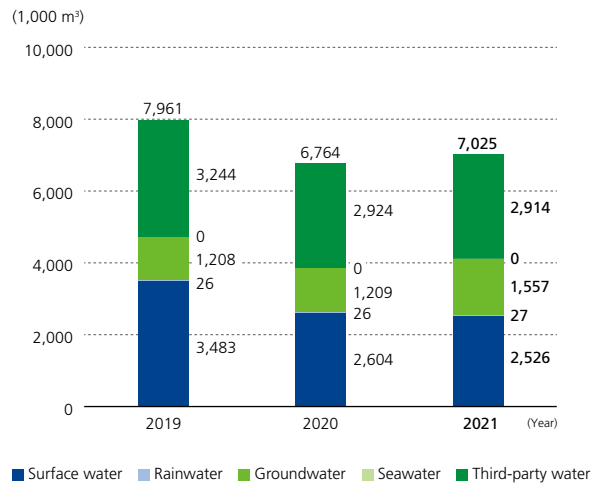
Water Intake by Region (excluding seawater for cooling on-site power generation facilities utilized by the Chemicals Company)



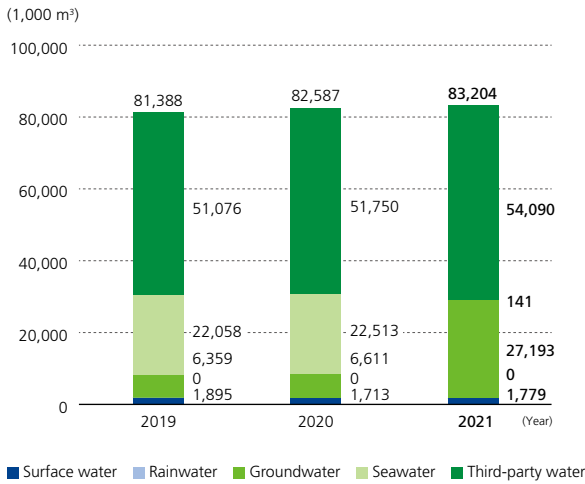
Water Intake by Source (excluding seawater for cooling on-site power generation facilities utilized by the Chemicals Company)



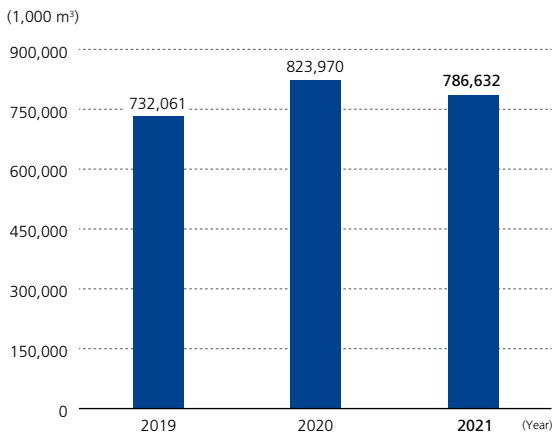
Water Intake by Source (Europe and the Americas) (excluding seawater for cooling on-site power generation facilities utilized by the Chemicals Company)



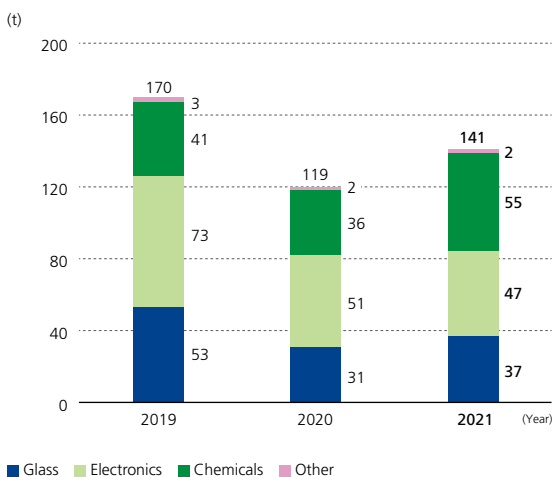
Water Intake by Region (Japan and Other Parts of Asia)
(excluding seawater for cooling on-site power generation facilities utilized by the Chemicals Company)



Use of seawater for cooling on-site power generation facilities utilized by the Chemicals Company



Emissions of Water Pollutants (Biochemical Oxygen Demand) by Business Segment



Initiatives for the Management of Chemical Substances

As well as a range of different types of glass for use in architecture, automobiles, and displays, the AGC Group sells electronic device components, chemicals, and ceramics. Moreover, our products have a wide range of applications. They are not only indispensable to various industries but also used to improve the convenience of day-to-day life. Meanwhile, as we use chemical substances in manufacturing processes, we have established risk management that reflects environmental impacts through entire value chains. Also, we endeavor to provide safe, reliable products.

The AGC Group is a signatory to the Responsible Care® Global Charter, which was revised in 2014, and is conducting appropriate management of chemical substances with a view to achieving the World Summit on Sustainable Development goal for 2020 of minimizing the adverse effects of chemical substances on people and the environment by 2020.

Management of Chemical Substances in Value Chains

In accordance with AGC Group Chemicals in Products (CiP) Management Standards, we minimize risks associated with the inclusion and use of hazardous and dangerous chemical substances in processes. These efforts extend from R&D on products and manufacturing methods through to product disposal.

Development

At the development stage, we reduce hazardous chemical substances used in both manufacturing processes and products.

Procurement

As for procurement, we have established the AGC Group Integrated Green Procurement Guidelines, which require reporting on the volumes of chemical substances that are subject to management under customers' green purchasing guidelines as well as the provision of declarations on the non-inclusion of environmentally hazardous substances.

Further, we seek reductions in the environmental impact of chemical substances used in the manufacturing processes of business partner companies.

Manufacturing

When using chemical substances during manufacturing, we not only comply with laws and regulations but also follow voluntary guidelines: the AGC Group Chemical Substance Management Regulation Guidelines. Based on these guidelines, we manage chemical substances used, assign chemical substance managers, and conduct chemical substance risk assessments. Moreover, taking into consideration the risk of environmental pollution or adverse health effects, we manage all chemical substances that we use, including those that are not regulated by law, under an original Chemical Substance Registration System.

In Japan, with the aim of ensuring proper understanding of Pollutant Release and Transfer Register (PRTR) Law requirements and calculation methods for reporting values, the AGC Group carries out PRTR training, standardizes data calculation methods in line with manufacturing processes, and raises awareness of rule changes while maintaining systems for data collection, calculation, checking, and notification. In addition, we engage in a broad range of reduction measures, including switching to manufacturing methods that do not use substances subject to the PRTR Law.

Further, a wide variety of chemical substances are used in the buildings and equipment required for our business activities. The Group thus complies with the laws and regulations of each country in respect to these chemical substances and also voluntarily manages them.

The Chemicals Segment's rigorous compliance with laws and regulations coupled with efforts to reduce environmental burden led to participation in the perfluorooctanoic acid (PFOA) stewardship program of the U.S. Environmental Protection Agency, which resulted in the discontinuation of the manufacture and use of PFOA by the Group at the end of 2015. We have also been actively engaged in the voluntary management of fluorochemical substances. For example, the Group achieved the fiscal 2020 greenhouse gas emissions reduction targets set out in a voluntary action plan prepared collaboratively by the Ministry of Economy, Trade and Industry, the Japan Fluorocarbon Manufacturers Association, and the Japan Chemical Industry Association. In addition, ahead of industry peers we have developed and introduced alternative products and technologies that have excellent safety and sustainability performance. For example, we have recently developed the AMOLEA™ series, which provides alternatives to hydrofluorocarbon refrigerants and solvents and has low global warming potential. Also, we have developed an ion exchange membrane for use in the electrolysis of water that produces hydrogen, which promises to be a next-generation energy source.

Recent years have seen the strengthening of regulations related to fluorochemical substances and growing interest in environmental protection worldwide. By continuing to appropriately manage chemical substances, we will reduce environmental impact and make effective use of resources. At the same time, we will contribute to the development of a sustainable society by making maximum use of the characteristics of fluorochemical substances.

In addition, we issue Safety Data Sheets for each product. As well as Japanese, the sheets are prepared in English, Chinese, Korean, and Malay for customers using the Group's products internationally. The sheets provide information on how to use and dispose of products correctly, along with any potential environmental and health impacts. Moreover, in accordance with laws and regulations and customer needs, we provide information on chemical substances contained in our products.

• Transportation

AGC Group sites in Japan share with all involved parties emergency measures to be taken during transportation by utilizing a Yellow Card that details the characteristics of chemical substances and products loaded on trucks and other modes of transportation.

Also, with respect to harmful substances created during manufacturing processes, we use Waste Data Sheets that provide transportation contractors and industrial waste treatment specialists with information on the characteristics of the industrial waste.

• Use and Disposal

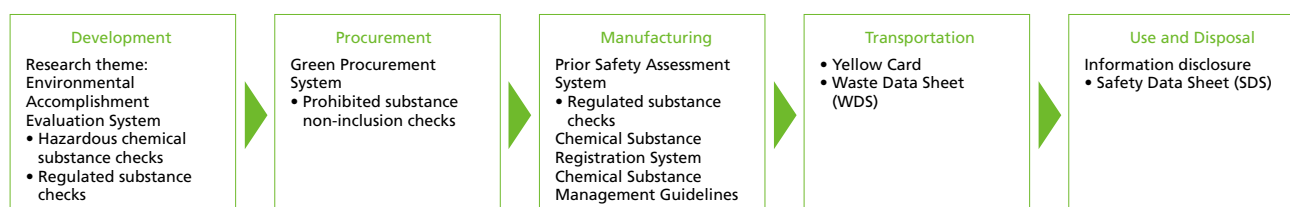
At the waste disposal stage, we use customers' responses to environmental surveys to share information on a range of environmental initiatives. As well as managing substances with environmental impacts and reducing regulated chemical substances, these initiatives pursue reductions in packaging materials, waste materials, CO₂ emissions in manufacturing processes and logistics, and the consumption of water resources.

■ Initiatives to Reduce Hazardous Chemical Substances

The AGC Group completed the removal of friable asbestos from its Japanese business sites in 2008. The Group also disposes of non-friable asbestos in an appropriate manner.

In response to the Minamata Convention on Mercury, the AGC Group has conducted a survey on the inclusion and use of mercury not only in manufacturing processes but across entire supply chains. The results showed that mercury is still used to some extent in porosimeters and other measuring equipment. However, no operational risks are posed by this equipment as the aforementioned convention permits the use of appropriately managed equipment. Naturally, we utilize permitted mercury-containing equipment in compliance with laws and regulations. Further, although alternative equipment is often unavailable, we replace equipment with substitutes wherever possible.

● Initiatives for Managing Chemical Substances in Value Chains



Compliance with Registration, Evaluation, Authorisation and Restriction of Chemicals Regulations

Dipropylene glycol used by the Chemicals Segment is registered with the European Chemicals Agency.

Initiatives for the Management of Air Pollutants

Given the emissions of such air pollutants as sulfur oxides, nitrogen oxides, soot, and dust generated when fossil fuels are combusted during the glass manufacturing process, the AGC Group is reducing its air pollutant emissions by enforcing at manufacturing sites voluntary standards that are stricter than statutory standards.

We are implementing a wide range of initiatives to reduce air pollutants. These include switching to manufacturing methods that minimize the release and transfer of hazardous chemical substances, reducing the use of hazardous chemical substances by changing product designs and specifications, introducing recovery and treatment equipment that lowers chemical substance emissions into the atmosphere and water, and changing over to alternative chemical substances. In Japan, we are also voluntarily monitoring the handling, release, and transfer of hazardous chemical substances that are not covered by the stipulations of the PRTR Law.

Products That Help Prevent Air Pollution

ACLESYA™, a Highly Reactive Neutralizing Agent for Exhaust Gas Treatment

[ACLESYA™ | Products and Service Information | AGC Chemicals Company \(agc-chemicals.com\)](https://www.agc-chemicals.com)

ACLESYA™ neutralizes hydrogen chloride and sulfur oxide in the exhaust gases of waste incinerators, thereby significantly eliminating a cause of air pollution. The product also helps curb fly ash and reduces the environmental impact of final disposal.

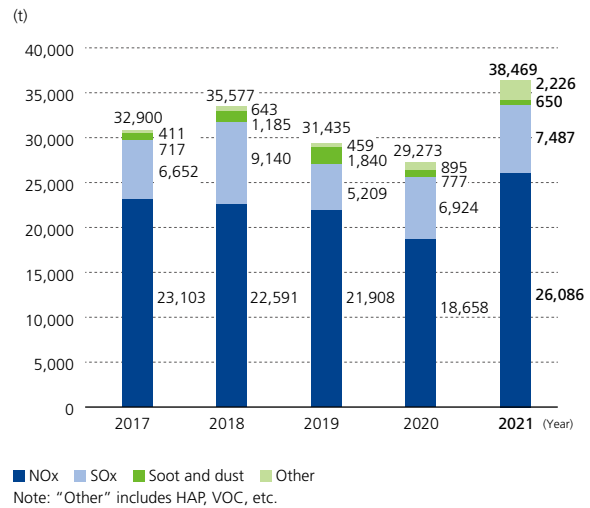


Major Air Pollutant Reduction Measures Implemented in 2021

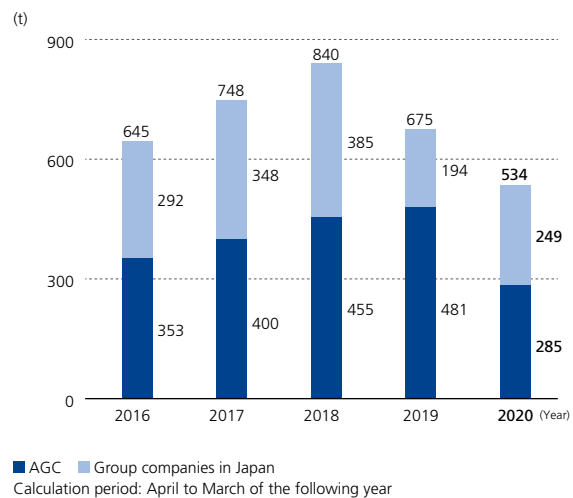
Base location	Measure	Target of Reduction	Reduction volume
China (Suzhou)	Optimization of exhaust gas treatment equipment	Soot, dust, and nitrogen oxides	Soot, dust 3.37 t Nitrogen oxides 2.8 t
Japan (Hokkaido)	Change in boiler fuel	Sulfur oxides	1,479 kg per year

Related Data

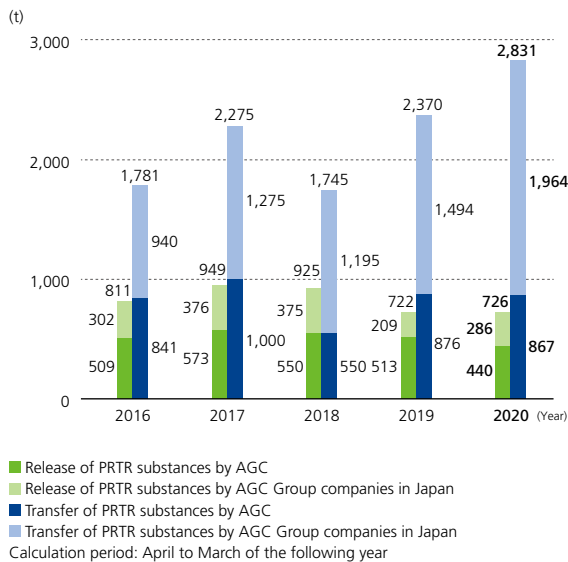
Air Pollutant Emissions of the AGC Group



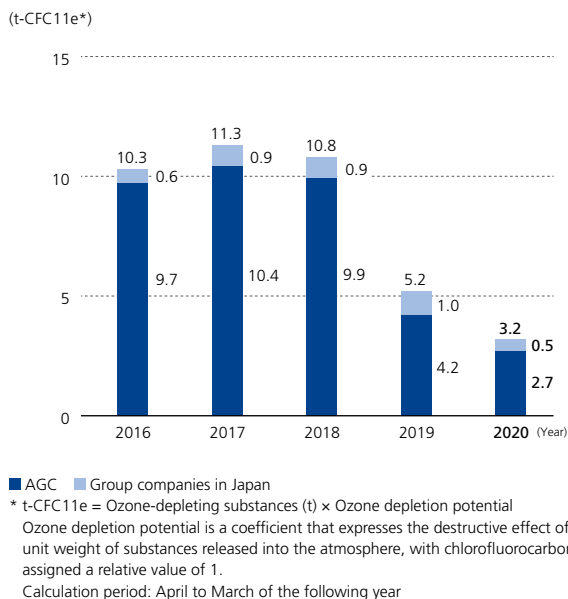
Volatile Organic Compound Emissions of the AGC Group (Japan)



Release and Transfer of Substances Subject to Notification under the PRTR Law



Atmospheric Release of Ozone-Depleting Substances Subject to Notification under the PRTR Law



Initiatives for the Prevention of Soil and Groundwater Contamination

To prevent soil and groundwater contamination, the AGC Group Guidelines regarding Measures for Soil and Groundwater Control set out standards for the storage and handling of hazardous substances, the management of storage tanks, and the management of wastewater and rainwater. Further, the guidelines stipulate methods of disclosing information on countermeasures if soil or groundwater contamination is discovered. We appropriately submit progress reports to administrative agencies and disclose information on the Group website with respect to measures for preventing the spread of and purifying known soil or groundwater contamination.

When acquiring, selling, or leasing land, we conduct environmental due diligence to evaluate in advance whether the real estate in question has any environmental defects. If soil or groundwater contamination is discovered, we minimize risks associated with laws and regulations and then acquire, sell, or lease the land.

Initiatives at the Chiba Plant

In 2001, the volatile organic compounds 1,2-dichloroethane, tetrachloroethylene, trichloroethylene, dichloromethane, and carbon tetrachloride were detected in a groundwater survey conducted at the Chiba Plant. AGC is taking measures to prevent the external spread of these substances by pumping up groundwater, purifying soil through soil vapor extraction, and establishing water insulation walls.

In addition, pursuant to the Water Pollution Prevention Act, we are taking measures to prevent underground seepage from the surface of the ground on which manufacturing equipment is installed.

Initiatives at the Kashima Plant

Dichloromethane and carbon tetrachloride were detected in a groundwater survey at the Kashima Plant in 2006. AGC is taking measures to prevent the external spread of these substances by pumping up groundwater, purifying soil through soil vapor extraction, and establishing water insulation walls. Also, as fluorine and arsenic surface soil contamination was discovered, soil was replaced and the surface re-covered.

Participation in Initiatives for the Conservation of Natural Capital

Through participation in biodiversity initiatives and industry associations, we will remain abreast of international trends and domestic policies related to biodiversity. For example, we will participate in the Convention on Biological Diversity post-2020 framework and the European Green Deal's EU Biodiversity Strategy for 2030. In conjunction with these activities, we will continue to cooperate in the implementation of initiatives to reduce the loss of biodiversity.

The AGC Group is a signatory to and participates in the international initiatives shown below.



Task Force on Climate-Related Financial Disclosures



Japan Climate Initiative



2021 CDP Climate Change, A- Rating



Corporate member of WWF Japan



Keidanren Initiative for Biodiversity Conservation



Japan Clean Ocean Material Alliance



Japan Business Initiative for Biodiversity

Verification Statement

総合認証機関



Greenhouse Gas Emissions Verification Report

To: AGC Inc.

June 14, 2022

Japan Audit and Certification Organization
for Environment and Quality (JACO)

2-2-19 Akasaka Minato-ku, Tokyo, Japan

President



Japan Audit and Certification Organization for Environment and Quality (JACO) has been engaged by AGC Inc. including its domestic and overseas consolidated subsidiary (hereinafter referred to as "the Organization") to conduct independent verification of its environmental data. The aim of this verification is to consider the accuracy of environmental data and to provide a verification opinion.

1. Purpose and scope of verification

With regard to GHG emissions information for the year 2021 (from Jan. 1, 2021 to Dec. 31, 2021) reported to the "SoFi database system" (hereinafter referred to as the system) prepared under the responsibility of the Organization, the verification was conducted.

- 1) Scope 1 and Scope 2 Greenhouse gas emissions from 310 domestic and overseas sites as of Dec. 31, 2021
- 2) Scope 3 Greenhouse gas emissions as defined by the Organization

The Organization revised a part of the data in the system that was used for the verification based on the verification results. The responsibility for preparing a calculation report and reporting GHG emissions is in the Organization and our responsibility is to express an opinion on GHG emissions stated in the calculation report by independent standpoint.

2. Verification procedure

JACO conducted the verification in accordance with ISO 14064-3:2019, Greenhouse gases - Part 3: Specification with guidance for the verification and validation of greenhouse gas statements. We conducted the following activities as part of limited assurance:

- Hearing or inquiries to the Organization's officials who are responsible for identifying and calculating greenhouse gas emissions;
- Evaluation of the information (data) used to determine the greenhouse gas emissions, the method of applying the calculation criteria, the method of measuring the data and the assumptions adopted by the company, and examination of description of the GHG report; and
- Verification by sampling in order to confirm accuracy of GHG emissions.

3. Conclusion

Based on the process and procedures conducted, there is no evidence that the Organization's GHG statement:

- is not materially correct and is not a fair representation of GHG data and information;
- has not been prepared in accordance with the methodology implemented by the Organization.

Verified greenhouse gas emissions

Scope 1: 6,986,198 tCO₂e, Scope 2: 4,621,187 tCO₂e, Scope 3: 11,527,305 tCO₂e

Details of Scope 3 emissions

Category 1: 3,406 ktCO₂e, Category 2: 685 ktCO₂e, Category 3: 2,266 ktCO₂e,

Category 4: 1,293ktCO₂e, Category 5: 14 ktCO₂e, Category 6: 18 ktCO₂e,

Category 7: 20 ktCO₂e, Category 10: 261 ktCO₂e, Category 11: 1,681 ktCO₂e,

Category 12: 1,716 ktCO₂e, Category 13: 167 ktCO₂e

Other categories are not reported since they are negligible or not applicable.

The Organization and JACO verification team did not have any specific conflicts of interest and carried out the verification on an independent basis.

Environmental Performance Data Independent Verification Report

To: AGC Inc.

総合認証機関

JACO

June 14, 2022

Japan Audit and Certification Organization
for Environment and Quality (JACO)

2-2-19 Akasaka Minato-ku, Tokyo, Japan

President

H. Omodera

Japan Audit and Certification Organization for Environment and Quality (JACO) has been engaged by AGC Inc. including its domestic and overseas consolidated subsidiaries (hereinafter referred to as "the Organization") to conduct independent verification of its environmental data. The aim of this verification is to consider the accuracy of environmental data and to provide a verification opinion.

Verification was conducted as limited assurance according to the procedure agreed with the Organization based on JACO verification standards in accordance with International Assurance Business Standard (ISAE) 3000. The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Summary of verification

With regard to the following Environmental Performance Data for the fiscal year 2021 (from Jan.1, 2021 to Dec. 31, 2021) reported to the "SoFi" database system (hereinafter referred to as the system) prepared under the responsibility of the Organization, verification was conducted.

1. Purpose and scope of verification

The Environmental Performance Data of business activities in the Organization's 359 domestic and overseas sites as of Dec. 31, 2021

- Water usage (purchase and water intake volume) and discharge in the sites;
- Wastes including "sellable waste" (generation of waste and sellable waste) generated at the sites.

2. Sampling sites and verification procedures

- Data verification: 14 sites (including visited site: 2 sites)

Verification was conducted based on confirmation of the related documents formulated, interviews with or inquiries to the responsible persons and persons in charge, confirmation of the method of obtaining data, and comparison between the reported data and supporting documented information (evidence).

Conclusion

Based on the procedures we have performed and evidence we have obtained, nothing has come to our attention that causes us to believe that the Organization's Environmental Data is not prepared, in all material respects, in accordance with the methodology implemented by the Organization.

Verified Environmental Performance Data

- Water usage: 876,859,816 m³, Water discharge: 828,917,523 m³
- Wastes amount: 447,207 tons, Sellable waste amount: 415,471 tons

Independence and Quality Control

We have conducted the verification in accordance with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. JACO maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable regulatory requirements in accordance with the International Standard on Quality Control 1.

The Organization and JACO verification team did not have any specific conflicts of interest and carried out the verification on an independent basis.

▶ Human Rights

Respecting Human Rights

Fundamental Approach

In 2011, the United Nations Human Rights Council announced its Guiding Principles on Business and Human Rights. Among the stated principles is “the responsibility of companies to respect human rights.” As an initiative in line with this principle, the AGC Group, a company that values human rights, created the definition of “Respect for People” in the AGC Group Charter of Corporate Behavior. Furthermore, regarding employees’ rights to freedom of association and collective bargaining, the Group complies with the laws and regulations of each country or region and respects the relevant international norms.

Management Structure

The AGC Group conducts human rights efforts in collaboration with relevant departments. The Human Resources Division conducts education on human rights as well as implementing voluntary inspections in relation to human rights and labor practices. Meanwhile, the Purchase and Logistics Division is responsible for a questionnaire survey on sustainable procurement, which covers the status of and initiatives in relation to human rights and labor practices in supply chains. In addition, the Human Resources Division and the Compliance Department have established internal and external consultation contact channels (harassment consultation desks, helplines, etc.) in a manner that takes into consideration those seeking consultation.

Groupwide Initiatives

■ Responding to Issues Regarding Human Rights and Labor Relations

The Human Resources Division and relevant workplaces cooperate to deal with human rights and labor relations issues. The Group also responds seriously to claims and comments received via the homepage and other channels, from persons inside and outside the Company.

■ Regular Self-Assessments of Human Rights and Labor Practices

The AGC Group conducts a self-assessment of human rights labor practices every three years at Group companies in and outside of Japan in order to ascertain the status of respecting human rights and the labor practices within the Group. The Group carried out such an assessment at approximately 190 companies in 2019 and responded promptly to cases requiring rectification. The next assessment is scheduled in 2022 after the Group updates its checklist based on social trends and other factors.

■ Support for the UK Modern Slavery Act 2015

AGC Chemicals Europe released the following official statement in accordance with the UK Modern Slavery Act 2015.

🌐 [Annual Statement on Slavery and Human Trafficking](#)

🔍 Important Human Rights Issues in the Chemical and Construction Material Industries

Core operation/ Supply chain	Workplace conditions	Working hours
		Health and safety
		Disciplinary measures
	Discrimination	During work
	Redundancy and dismissal	
Forced or compulsory labor	Deposits and papers	
	Forced overtime	
	Human trafficking	
Freedom of association	Freedom of association and collective bargaining	
	Conflict with local law	
Community	Resources	Use of natural resources
Society and government	Relations with governments	Bribery and corruption
		Relationships with countries that have a low awareness of human rights
	Relations with consumers	Health and safety

AGC Initiatives

■ Measures to Deal with Human Rights Issues and Harassment

AGC conducts harassment prevention and compliance training programs and endeavors to provide employees with a work environment that is free from discrimination and harassment. We implement stratified training and take measures aimed at preventing sexual harassment, power harassment, and various other types of harassment. If harassment occurs, we take corrective measures to prevent recurrence, which include reeducation of the individual at fault. To facilitate early detection of problems, AGC has established internal and external consultation contact channels (harassment consultation desks, helplines, etc.) in a manner that takes into consideration those seeking consultation. Through these contact channels, we expedite the provision of consultations to employees with concerns, address problems, and prevent their occurrence. Moreover, the helpline managed by the Compliance Department is available to not only AGC employees but all Group employees.

■ Freedom of Association and the Right to Collective Bargaining

Within AGC, the employees' union, the AGC Labor Union, works to maintain and strengthen healthy labor-management relations. In labor-management negotiations, both sides take a logical and reasonable attitude to solving problems through discussion. The labor union negotiates with management on working and other conditions for its members. The union managers and top management of AGC have meetings that are focused on management of the entire business at least twice a year.

📊 Data about the AGC Labor Union

FY	Number of members*	Average age	Length of service
2017	3,954	40.1	6 years and 4 months
2018	4,154	39.4	15 years and 1 months
2019	4,212	39.4	15 years and 3 months
2020	4,386	39.6	15 years and 2 months
2021	4,526	39.7	15 years and 3 months

* AGC adopts a union shop system under its labor agreement.

▶ Human Resource

Human Resource Management

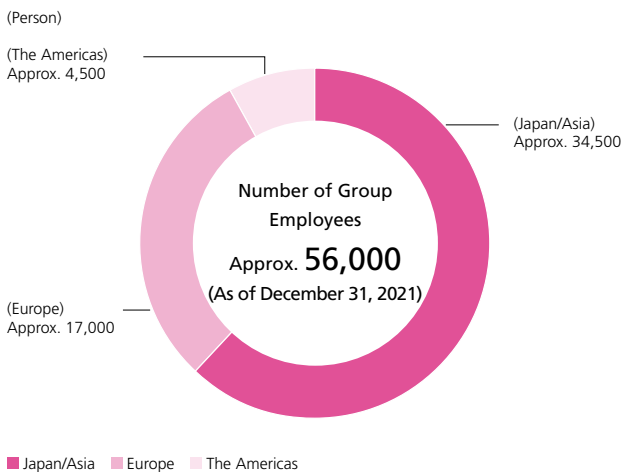
Fundamental Approach

To continuously evolve as a truly global enterprise, the AGC Group has set out the 7 Key Principles for People, which are aimed at realizing progressive human resource (HR) management.

Management Structure

In the AGC Group, the Human Resources Division takes the initiative in conducting human resource management in line with the 7 Key Principles for People, which define our philosophy toward human resource management. With regard to labor laws and practices in each country or region as well as employees' understanding of their roles, the Group works in cooperation with HR representatives in each company and region to execute the principles.

● Number of Employees by Region (AGC Group)



AGC Group "7 Key Principles for People"

The AGC Group wishes to pursue these principles as the foundation of our "7 Key Principles for People" to maximize our performance as a truly global corporation.

Implementation of "Look Beyond"

AGC Group requires all employees to commit to our Shared Values of "Look Beyond" —Our four Shared Values: Innovation & Operational Excellence, Diversity, Environment, and Integrity.

Diversity for Organizational Competitiveness

AGC Group builds teams of diverse people who support our four Shared Values of "Look Beyond" and have the abilities to contribute to organizational competitiveness.

Development and Growth

AGC Group encourages employees to grow and provides them with opportunities for self-development.

Job Satisfaction and Pride

AGC Group encourages employees to achieve their goals so that they feel a sense of pride and satisfaction in their work.

Work Environment and Conditions

AGC Group provides a safe and healthy work environment.

Open Communication

AGC Group emphasizes open communication in the workplace to create a better organizational climate.

Evaluation, Recognition and Rewarding Performance

AGC Group evaluates and recognizes employees who contribute to the organization and rewards their contributions.

Groupwide Initiatives

■ Fostering Global Leaders

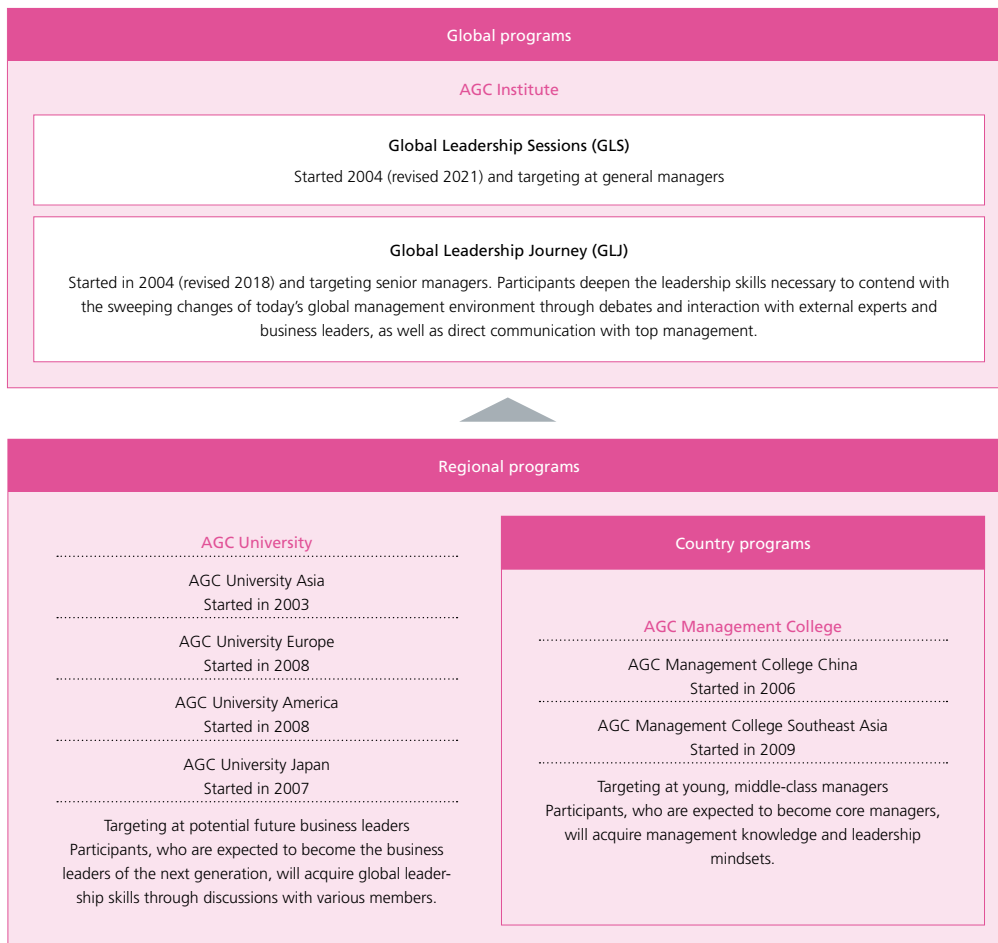
The AGC Group identifies talent from all over the world, regardless of nationality and gender, to promote the fostering of global leaders who can lead the Group forward globally and in a systematic and organized way. The Group trains diverse talent at the global, national, and regional levels.

In an effort to promote the localization of business management for Group companies in each region, the Group encourages assignments and projects outside the home

country as well as Groupwide training courses and on-site training, in accordance with the current status of respective businesses and regions.

In 2021, the Group hosted a global program, including online training, to develop talented management personnel for Group companies and divisions in all countries and regions where they operate, although a portion of the program was canceled due to COVID-19.

● The AGC Group's Leader Training Programs



AGC Initiatives

Human Resource Management System

AGC manages employees fairly in consideration of their abilities and performance. The Company aims to provide its diverse range of employees with the systems and environments necessary to help them perform their jobs, without discrimination based on gender, age, or disability.

For that reason, the Company clarifies employees' roles, functions, and responsibilities and utilizes and evaluates capable employees fairly, regardless of age, length of service, or gender.

Number of Employees at AGC

As of December 31, 2021, excluding those dispatched from other Group companies

Classification	Men	Women	Total	Percentage of women employees	
Managers	2,384	177	2,561	7%	
Non-managers	Career-track positions	713	183	896	20%
	Shop-floor workers	3,110	148	3,258	5%
	Clerical positions	13	495	508	97%
	Subtotal	3,836	826	4,662	18%
Total	6,220	1,003	7,223	14%	

Employee-Related Data for AGC

As of December 31, 2021

Item	Men	Women	Total
Average age	43.6	42.5	43.4
Average length of service	18.4 years	14.9 years	17.9 years
Average overtime working hours	18.8 hours/month (average for members of the labor union)		
Percentage of paid leave taken	95.0% (average for members of the labor union)		

Number of Employees Retiring (AGC)

Period: April 2021 to March 2022

Excludes employees retiring upon reaching the mandatory retirement age

	Number of people
Number of employees retiring	189

Retention Rate of New Employees (AGC)

As of April 2022

Year of recruitment	Number of people	Retained employees	Retention rate
2018	99	86	86.9%

Percentage of Mid-Career Hires (AGC)

Year	Percentage of mid-career hires among regular employees
2019	50%
2020	51%
2021	68%

Improving Employee Engagement

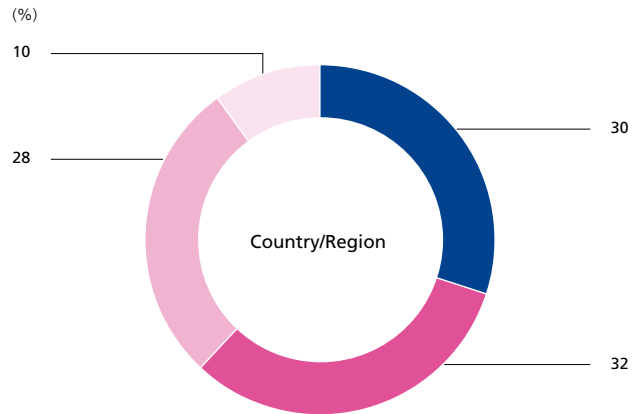
Fundamental Approach

The AGC Group aims to become a company that puts into practice its human resource management slogan—“AGC People: the driver of our growth!”,—by ensuring that its employees are motivated to work and improving its corporate culture. In other words, we strive for higher employee engagement, and to this end, employees, managers, and members of the senior management team all consider ways to solve problems and find appropriate measures through dialogue. The Group also strives to make these approaches and activities part of its employees’ daily work.

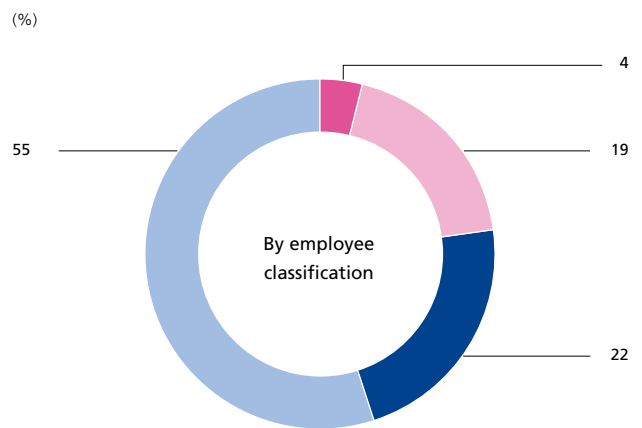
Groupwide Initiatives

Since 2005, every three years the Group has conducted engagement surveys targeting Group company employees both inside and outside Japan, with the aim of improving overall engagement. Based on the results of these surveys, the Group formulates and executes necessary policies at individual divisions or workplaces and confirms the positive effect of the policies in the following survey. Most recently, in September 2019 the Group conducted a sixth survey in 22 languages targeting approximately 48,000 individuals. The positive response rate increased compared with the previous survey in 2016, and the effect of measures taken by each division and workplace was evident. Based on the results of the 2019 survey, we have been discussing workplace issues and developing additional measures to resolve them. In fiscal 2022, we plan to conduct another engagement survey, and we will utilize the results of this survey to inform the next set of engagement enhancement initiatives that we tackle.

Engagement Survey Respondents by Region/Job



■ Japan ■ Asia (excluding Japan) ■ Europe ■ The Americas



■ Executive ■ Manager/supervisor ■ Professional/administrative ■ Shop floor

Engagement Survey Respondents

	Eligible employees	Respondents	Response rate
First survey (conducted in July 2005)	9,247	8,435	91%
Second survey (conducted in November 2007)	40,100	31,126	78%
Third survey (conducted in November 2010)	39,055	31,729	81%
Fourth survey (conducted in November 2013)	40,321	33,214	82%
Fifth survey (conducted in November 2016)	43,546	36,773	84%
Sixth survey (conducted in September 2019)	47,533	41,897	88%

Engagement Survey Topics

Employee Engagement	Employee Enablement	Change from Previous Iterations
<ol style="list-style-type: none"> 1. Clear and promising direction 2. Leadership 3. Quality and customer focus 4. Respect and recognition 5. Development opportunities 6. Compensation 	<ol style="list-style-type: none"> 1. Performance management and compensation 2. Authority and empowerment 3. Resources 4. Collaboration 5. Work efficiency 	Understanding and practice of “Look Beyond”

■ Establishment of the AGC Group CEO Award System

The AGC Group has set up the annual AGC Group CEO Award System with the goal of creating a positive corporate culture that encourages respect, commendation of success, and recognition of efforts among its members. Information on the award-winning activities is shared via the intranet website. To maintain a high level of motivation for its employees, the Group is constantly rethinking ways to acknowledge and commend their contributions.

● Commendations Awarded across the AGC Group in Fiscal 2021

Division	Number
Architectural and Industrial Glass	8
Automotive	7
Electronics	8
Chemicals	8
Multi-Material General Division	1
AGC Ceramics	2
CTO Office*1	5
CFO Office**2 and Internal Auditing	2
Total	

*1 The Productivity Innovation Division, Business Development Division, Intellectual Property Division, Environment, Occupational Health&Safety and Quality General Division, and Technology General Division

*2 The Management Planning Division, Corporate Communications and Investor Relations Division, Legal Affairs Division, Human Resources Division, Finance&Control Division, Purchase&Logistics Division, and Information Systems Division

■ Maximizing Employee Potential through Diverse Workstyles

The AGC Group has set out its long-term management strategy, Vision 2030. To put this strategy into practice, since 2016 the Group has been reviewing workstyles that allow all employees to work to their full potential and work environments that allow Group employees to work creatively.

For example, AGC itself is focusing on initiatives for promoting more flexible and diverse workstyles. These include the introduction of a system giving employees time off in the case of their spouse transferring jobs, and another system that provides teleworking options that are not only limited to cases of childcare or nursing care. Other initiatives include the enhancement of the reemployment registration system, which envisions potential life stage changes for once-retired employees, the introduction of a system providing support for employees undergoing medical treatment that encourages striking a balancing between treatment and work, and the implementation of a system offering paid leave in one-hour increments.

The Group will continue to encourage the use and establishment of these systems. By doing so, the AGC Group aims to become a company that puts into practice its human resource management system—"AGC People: the driver of our growth!"—viewing its human resources as the Group's most important asset and drawing out their maximum potential.

To maximize their potential, it is crucial to guarantee the physical and mental well-being of all employees, which directly leads to increased employee activity, satisfaction, and productivity. This is the foundation of "AGC People: the driver of our growth!" To this end, the Group actively supports healthy management initiatives applicable to the AGC Group as a whole.

Global Promotion of Diversity

Fundamental Approach

The AGC Group has highlighted the importance of diversity, the source of the Group's competitiveness in the long term, in its Shared Values from the Group Vision **"Look Beyond"** and strives to achieve such diversity. "Diversity for Organizational Competitiveness" is addressed in the 7 Key Principles for People, which aim to realize progressive human resource management. "Respect for People" is discussed in the AGC Group Charter of Corporate Behavior. Based on these guidelines, the Group strives to create fair and open work environments that are free of discrimination.

Management Structure

In the AGC Group, the Human Resources Division is the main player in setting goals for achieving diversity. Concrete measures are devised in cooperation with the human resources divisions of each company and region.

Groupwide Initiatives

■ Hiring Diverse Personnel

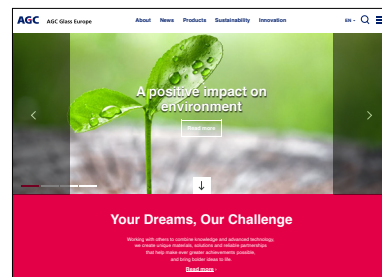
To strengthen its brand as a global employer, the AGC Group has created a standard recruiting website for Japan, Europe, and Thailand, featuring a consistent recruitment brand message for the Group. Since 2010, when hiring new graduates for career-track positions, AGC has boosted efforts to hire Japanese and non-Japanese students graduating from overseas universities as well as non-Japanese students graduating from Japanese universities. Also, the Asia-Pacific region is an important location in AGC's business strategy. To accelerate new business and market development, the local holding company AGC Asia Pacific Pte. Ltd. was established in Singapore in 2013 and, regardless of country of origin, the Group is hiring ambitious, highly capable, and talented people from both inside and outside the region.

● Non-Japanese Nationals Hired during New Graduate Recruitment for Career-Track Positions (AGC)

Year	Exchange students in Japan	Graduates of overseas universities
2017	1	0
2018	1	1
2019	3	2
2020	2	6
2021	4	1



The recruiting website for Japan



The recruiting website for Europe

■ Support for the UK Modern Slavery Act 2015

The AGC Group is promoting the career development of its female employees based on the principle of global management without regard to gender, in accordance with Diversity, one of the four Shared Values of the Group Vision **"Look Beyond"**. Guided by the AGC Group Charter of Corporate Behavior and discussions at meetings of the Board of Directors, the Group is striving to create fair and open work environments, free of discrimination based on gender or any other grounds.

To create an environment conducive to the active participation of women, AGC has established a registration system for retirees wishing to be rehired. Under this system, we register female retirees who would like to return to work and give those who have registered priority over external applicants when hiring.

■ Support for Raising Children

AGC provides support through a cross-departmental network of female employees for raising children, examples of which include the introduction of the Nursery Use Support System for external nurseries registered as AGC corporate bodies; the creation and distribution of handbooks for female employees and female managers who are pregnant or raising children; the holding of tri-party meetings between the Women's Activity Secretariat, female employees, and their managers (both before taking childcare leave and after returning); and the holding of career design seminars after returning to work.

AGC Initiatives

■ Promotion of Female Employees to Management Positions

To provide society with value through the realization of diversity that empowers talented personnel regardless of gender, AGC aims for women to account for 30% of its directors and Audit & Supervisory Board members and 20% of its executive officers by 2030. Further, women accounted for 3.9% of AGC's managers (division manager or higher) as of the end of December 2021. Also, we have appointed one female outside director and one female Audit & Supervisory Board member as well as internally promoting one female employee to the position of executive officer. Going forward, our initiatives will focus on stepping up the recruitment of talented women, actively promoting female employees through assignment and development, and creating an environment that empowers female employees (the introduction of required systems). Our goal is to raise the percentage of women in management positions (division manager or higher) to approximately 8.0% by 2030.

📊 Trends in Percentages of Female Managers (Division Manager or Higher)

Year	Percentage of female employees
2017	2.7%
2018	3.3%
2019	3.5%
2020	3.6%
2021	3.9%

📊 Trends in Percentages of Female Managers (General Supervisor or Higher)

* As of December 31, 2021 (excluding members over 60 years old)

Year	Percentage of female employees
2017	4.7%
2018	5.2%
2019	5.7%
2020	5.9%
2021	6.8%

📊 Number of New Female Graduates Recruited for General Career-Track Positions

Year	Number of new female graduates	Total new graduates	Percentage of female employees
2019	26	109	23.9%
2020	16	110	14.5%
2021	22	117	18.8%

■ Employment of People Who Have Reached Retirement Age

In April 2006, the AGC Group introduced a system to continuously employ retiring non-managers who meet personnel criteria for continuous employment. The criteria are provided in the labor-management agreement with the aim of utilizing the expertise, technological prowess, and skills of retirees and of reinforcing personnel ranks. Since fiscal 2013, AGC has been gradually raising the age limit of employees eligible to apply for continuous employment, in accordance with a revision of the Law Concerning Stabilization of Employment of Older Persons, and plans to abolish age limitations by fiscal 2025. Similarly, going beyond legal stipulations, AGC has been gradually raising its retirement age, currently set at 60, since fiscal 2015 and will bring it up to 65 in fiscal 2025. This will allow employees over 60 to continue thriving in important positions in the workplace.

● Number of Continuously Employed Individuals Aged 60 or More

Year	Number of reemployed retirees	Number of retirees	Continuous employment rate
2016	111	124	89.5%
2017	63	84	75.0%
2018	64	100	64.0%
2019	—	—	—
2020	41	71	58.0%
2021	58	113	51.3%

Notes: 1 As shown in the table below, the age of retirement is gradually increasing, and there were no retirees in 2019.

2 An optional retirement system has been in use since fiscal 2021. Employees who opted to retire before the age of retirement are included in the number of retirees.

● Reference: Retirement Age for Employees Based on Date on Which They Become 60 Years of Age (up to 2021)

Year	Retirement age	Year of retirement
2016	62	2018
2017	63	2020
2018		2021
2019	64	2023
2020		2024
2021	65	2026

■ Employment of People with Disabilities

The AGC Group has expanded employment opportunities for people with disabilities. AGC has exceeded the employment rate of people with disabilities designated by law and continues to promote understanding of this initiative throughout the Company.

● Employment of People with Disabilities

FY	Number of people with disabilities (actual number)	Employment rate
2016	112	2.17%
2017	122	2.30%
2018	127	2.28%
2019	129	2.23%
2020	137	2.32%
2021	144	2.36%

■ Special Subsidiary, AGC Sunsmile

AGC Sunsmile, Inc. is a special subsidiary established in 2002 with a view to increasing the employment of people with intellectual disabilities. In cooperation with relevant organizations, the Company strives to provide a better work environment for highly motivated employees. Duties consist mainly of cleaning Company offices, dormitories, and Company residences, and the business is being developed in the Keihin, Sagami, and Kansai areas.

At the AGC Kansai Plant (Takasago Factory), employees with intellectual disabilities are assigned to greening activities and janitorial work. Depending on the needs of departments at business bases, such employees also engage in the conversion of documents into portable document format (PDF) and supplementary work related to manufacturing processes. Moreover, we are creating additional opportunities for AGC Sunsmile employees to contribute by extending the scope of their work.

Work–Life Balance

Fundamental Approach

The foundation of the AGC Group's human resource management, the 7 Key Principles for People, outlines how to maintain a work environment that allows employees to work safely. Based on these principles, the Group seeks to secure and maintain a work environment and conditions that enable employees to work with enthusiasm.

Management Structure

The Human Resources Division is the main body in the AGC Group working to ensure a quality work–life balance for all Group employees. Based on the laws and practices of each country and region in which it operates, the Group considers work–life balance on a company-by-company basis, in light of the nature of business conducted by individual companies.

AGC Initiatives

AGC is improving its work environment with the aim of helping its employees perform their jobs with peace of mind and fully demonstrate their abilities at every stage of their lives. More specifically, in addition to maintaining a system for work–life balance, AGC creates an environment that facilitates the use of this system.

Supporting Employees Caring for Children or Family Members

AGC has implemented several systems for employees who care for children and family members, including a childcare leave system, a child nursing leave system, and a shortened working-hour system. In 2012, the Group introduced a flexible work-from-home system that eliminates commuting times and allows employees to spend more time with their children and others requiring care. In recognition of the results of these various initiatives, in 2008, 2011, 2015, and 2019 AGC was certified by the Tokyo Labor Bureau of the Ministry of Health, Labour and Welfare, based on the Act on Advancement of Measures to Support Raising Next-Generation Children, and authorized to use the Kurumin certification mark to indicate its support for the next generation. Further, AGC was selected by the Ministry of Economy, Trade and Industry in cooperation with the Tokyo Stock Exchange as a NADESHIKO brand company for its exceptional promotion of women's success (fiscal 2019 and fiscal 2020).

Employees Taking Childcare/Family Care Leave

Year	Number of employees who took childcare leave	Number of employees who took family care leave
2017	79 (including 14 male employees)	2
2018	79 (including 14 male employees)	7
2019	79 (including 14 male employees)	10
2020	79 (including 14 male employees)	2
2021	79 (including 14 male employees)	3



AGC was selected as a NADESHIKO brand company in fiscal 2020.



Next-Generation Support Certification Mark "Kurumin"

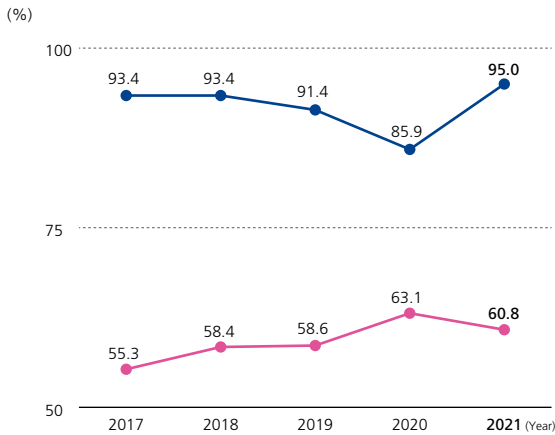
Comparison between AGC's System and Legal Requirements

System	Details
Childcare leave	Available until the child becomes two years old
Shortened working hours for childcare	Working hours can be shortened by up to two and a half hours per day until the child completes third grade at elementary school.
Capping of the number of overtime and holiday working hours for childcare, including exemptions for late-night work	If an employee wishes, their overtime, holiday, and late-night working hours may be capped or exempted.
Child nursing leave	Five days allowed per child each year until the child completes third grade at elementary school
Support for nursery use	Nurseries that AGC is affiliated with may be used in areas of high need (Tokyo and Kanagawa)
Working from home	Working from home is possible without stating reasons, such as raising children or nursing care (no limit on number of days)
Flextime	Flextime without core working hours is possible without stating reasons, such as raising children or nursing care
Paid leave in one-hour increments	Employees may take a maximum of five days of their allotted annual paid leave in one-hour increments.
Leave of absence during spouse's job transfer	Leave of absence is possible if required to accompany spouse on new job transfer (maximum three years)
Registration for reemployment of retirees	Registration for reemployment is possible for those who quit the company voluntarily for any of the following reasons: marriage, childbirth, raising children, spouse's job transfer, or nursing care.
Women's mentorship system	Mentorships from senior female employees are available for work-related experience counseling or personal advice (general career-track position female employees).

Promoting Annual Paid Leave (AGC)

In fiscal 2021, AGC employees took 95.0% of their leave (the average for labor union members). As a part of the annual paid leave system, the Group has also introduced a half-day leave system for employees.

Average Percentage of Annual Paid Leave Used



● AGC ● All industries (with 1,000 employees or more)

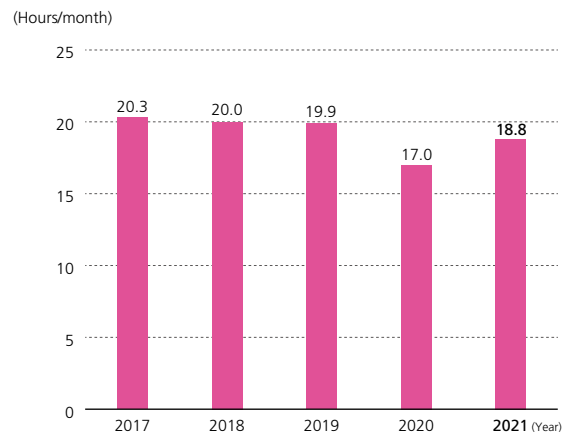
Notes: 1. Labor union member average

2. Data for all industries is sourced from a General Survey on Working Conditions by the Ministry of Health, Labour and Welfare.

Reducing Overtime Working Hours

AGC strives for the proper management of its employees' working hours. Currently, based on the idea that the AGC will strive to reduce overtime and holiday work by helping its employees find ways to work more efficiently and to ensure that unpaid overtime is not worked, AGC manages daily work through sufficient communication between administrators and their subordinates, implements agreements with the labor union based on the Labor Standards Act, and promotes appropriate management of working hours using data recorded by ID card readers and PC logs. To prevent health complications caused by overworking, AGC has set in-house standards, which are stricter than those mandated by law, requiring employees who have completed a certain amount of overtime to visit an occupational physician. In addition, the sharing of case studies is promoted so that human resource managers at each Group company in Japan can discover activities that promote the effective management of working hours.

Overtime Working Hours (AGC)



Note: Labor union member average

Employee Education

Fundamental Approach

The AGC Group outlined its policy on Development and Growth in the 7 Key Principles for People, which aim to realize progressive human resource management. The Group has established a variety of training programs, such as technology and skills training provided alongside rank-specific training. The AGC Group aims to become a company that puts into practice its human resource management slogan—"AGC People: the driver of our growth!"—and its human resources are the driving force for the growth of the Group's business operations. This training further supports employee growth.

Management Structure

The AGC Group organizes an educational system, chiefly through the Human Resources Division, in cooperation with the personnel officers of each in-house company and region. In addition, the training systems and methods are continuously reviewed and improved.

Groupwide Initiatives

■ AGC Monozukuri Training Center

The AGC *Monozukuri* Training Center is an educational facility designed to effectively cultivate AGC Group personnel. The training center comprises two areas, one for training and one for practical application, and it provides training on about 80 clerical and technical topics, principally for AGC Group employees in Japan. In terms of practical training, technical education is designed around the concept of "the site, the work, and the conditions." The training center, equipped with the same machines and equipment as those used in AGC Group plants, provides trainees with practical, hands-on learning opportunities. Trainees are able to learn about processes they may not encounter in their daily work at their respective plants, such as the structure of a melting furnace and relevant troubleshooting methods. Training is also provided to business partners to boost the standard of manufacturing excellence and personnel cultivation throughout the supply chain.



Training and education building

● Number of AGC *Monozukuri* Training Center Users

FY	Annual training hours (hours/person)
2019	21,969
2020	3,676 (Center visitor numbers restricted to prevent the spread of COVID-19)
2021	415 (Center visitor numbers restricted to prevent the spread of COVID-19)

■ Training Programs

The AGC Group continuously works to develop human resources by implementing training according to rank, from new employees up to management, as part of its rank-specific development programs. In addition, the Group enhances and carries out many types of elective training in various specializations and for improving business skills.

■ Provision of Online Training

Since 2014, the AGC Group has been providing employee training online as part of its "learn anytime, anywhere" workplace-building initiative. As of the end of fiscal 2021, 15 of 85 training courses had been made available online or through videos. Through supplementation of these courses, the Group will continue to support its employees' education. Meanwhile, to balance preventing the spread of COVID-19 with continuous learning, the Group largely carried out its training as scheduled by holding group training, at which participants would normally assemble in one place, online or via video streaming. The Group will continue to examine a range of training methods and improve training contents as it strives to create an environment conducive to learning for its employees.

■ Promoting AGC Group Improvement and Innovation Activities

The AGC Group promotes improvement and innovation activities in order to raise the productivity of the entire Group. In addition to increasing productivity throughout the supply chain, the Group is actively expanding the scope of activities to related departments, such as sales and marketing. In recent years, by simulating optimal productivity when new businesses and products are about to be launched, the Group has been raising the likelihood of success in its business ventures. In addition, we have begun new activities to build rewarding work environments and improve employee engagement by systematically identifying and promoting the resolution of issues in organizations.

Improvement Management Program

We conduct training aimed at fostering core personnel who have knowledge and skills related to improvement management and are able to advance business improvement and innovation in workplaces. As a result of this training, more than 220 personnel now promote improvement and innovation activities at business bases worldwide.

A key goal of the training is to ensure that personnel understand the importance and roles of industrial engineering and data science in designing digital transformation system. Therefore, we are focusing on giving personnel the ability to solve practical problems through an approach that rationally sets out business issues in terms of design and then uses data science to gain insight into current situations and to discover improvement scenarios.

Development of Dual-Skilled Personnel

We are focusing on the development of dual-skilled personnel who have both operational knowledge in relation to mainstay businesses and advanced data analysis skills. Globally, we operate a practical training system that enables the progressive acquisition of machine learning and multi-variate analysis knowledge and skills, which are essential when utilizing data science. By combining practical data science training that sets issues identified in workplaces as assignments for trainees with education that emphasizes practice, we are increasing the quality of improvement and innovation activities.

■ CNA: Cross-Divisional Network Activities

The AGC Group created Cross-Divisional Network Activities (CNAs) to enable employees possessing common skills to network with each other. These activities would otherwise be impossible due to employees' day-to-day work being conducted in different organizations. Objectives of this initiative include building networks between employees with common skills and honing specialist skill sets while engaging in issue resolution. CNAs take place in various guises, from information sharing to joint research. By discussing potential roadblocks and bringing together skills and knowledge, solutions to common issues and ideas for new technologies emerge. For example, collaboration between the sales and R&D departments gives the customer a role in the R&D process, allowing them to bring in viewpoints and fresh ideas that can spark new initiatives.

■ Skills Map: A Unique Personnel Database

The AGC Group introduced a unique personnel database, the Skills Map, in 2010. This Groupwide database, in which employees are registered according to their specialty, enables the Group to "see" the skills held by employees in various divisions. As of the end of December 2021, approximately 6,000 employees were registered under the Skills Map in 29 technical categories and 12 sales and administrative categories. The database helps us utilize human resources effectively, encourage communication among personnel, and facilitate Cross-Divisional Network Activities. Introducing the Skills Map has enabled users to see which organization employees with certain skills belong to, encouraging strategic recruitment in accordance with the relevant growth strategy. The database also facilitates human resource searches and personnel allocation based on a "right person in the right place" approach. The Skills Map is also utilized in implementing CNAs.

Individual Company Initiatives

■ Career Development Support (AGC)

AGC has introduced the Challenge Career System to encourage employees to apply for the jobs they want on their own volition. The system assigns appropriate people to newly launched businesses and operations that need strengthening, further invigorating the organization in the process. In addition, the Professional System and the Meister System have been adopted in order to appropriately evaluate and manage those with highly specialized expertise or advanced technological skills.

Challenge Career System

- An in-house voluntary recruitment system, under which employees apply to job offers publicly posted by in-house organizations once a month (a total of 217 employees to date)
- An in-house free agent system, under which employees register for the jobs that they wish to perform at other departments and undergo screening individually for job consideration (a total of 114 employees to date)

Professional System

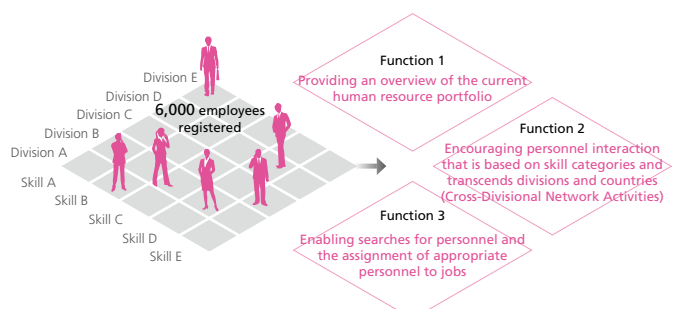
A system under which managers, who have extremely high practical knowledge, skills, or behavioral traits regarding technological skills and expertise vital to the AGC Group and can exercise them to a great extent, are certified as professionals, evaluated, and treated appropriately (53 managers).

Meister System

A system under which engineers, who have outstanding technical skills and knowledge vital to the continuous development of the AGC Group and can exercise them to a great extent and who are responsible for the training and guidance of their successors, are certified, evaluated, and treated appropriately (5 employees)

Note: Current numbers are as of December 31, 2021. The number listed for the Challenge Career System is the total number of users since 1999.

● The Three Functions of the Skills Map



Occupational Health and Safety

Fundamental Approach

The AGC Group has formulated the AGC Group Basic Occupational Health & Safety Policy and promotes activities to create a safe and healthy work environment under the occupational health and safety policy of “No Production without Safety.”

AGC Group Basic Occupational Health & Safety Policy
(Established on February 9, 2001 and revised on March 29, 2013)

Basic Policy

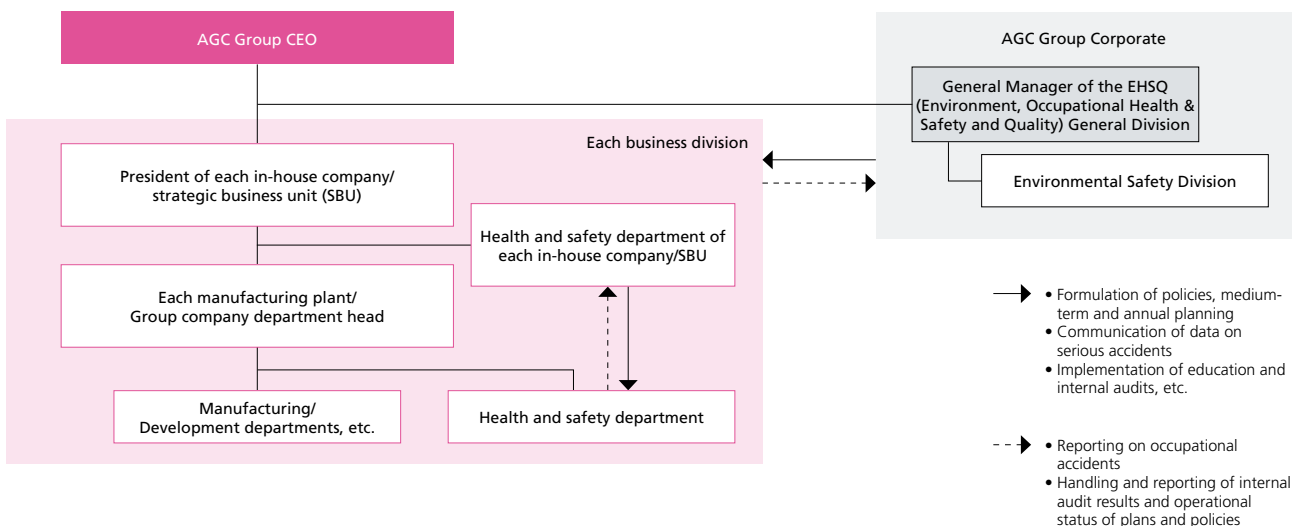
The AGC Group will manage occupational health and safety (hereinafter, “OH&S”) under the policy of “No Production without Safety,” and all managers will ensure that the OH&S policy should be clearly understood and permeated throughout the Group and that all employees should be actively involved in the promotion of OH&S activities.

Guidelines for Occupational Health and Safety Activities

We will actively implement OH&S activities by addressing any possible issues on occupational accidents and illnesses to achieve continuous improvements in our OH&S performance, based on the following guidelines.

1. We will enhance the level of our risk assessments to promote effective use of our OHSMS.
2. We will continue our conventional on-site safety activities without making them a mere repetitive routine.
3. Managers will treat their subordinates like family members and ensure safety at workplaces.
4. We will promote intrinsic safety of equipment and look for continuous improvements in the workplace environment. We will implement OH&S activities as part of production line activities. The departments in charge of OH&S will provide necessary support for line management.
5. We will comply with OH&S-related laws and requirements.
6. We will encourage proactive employee participation in all OH&S activities through open, honest, and fair interactions and communication at workplaces.

The AGC Group’s Health and Safety Management Initiatives



Management Structure

The AGC Group is pushing ahead with health and safety activities based on the concept of an occupational health and safety management system (OHSMS). Since fiscal 2013, the Group has been using the EHSQ (Environment, Occupational Health & Safety, and Quality) Management System to manage EHSQ across the entire Group. Based on the approach of ISO 45001, the Group stipulates aspects of EHSQ management that it must carry out in the AGC Group Occupational Safety and Health Regulations and applies them globally at each in-house company and strategic business unit (SBU). Additionally, each business site manages its own activities based on the OHSMS and strives to improve health and safety management levels through audits conducted by corporate divisions and individual business units. Furthermore, business sites endeavor to obtain third-party OHSMS certification for organizations and plants with significant occupational health and safety risks. Each business unit examines its policies and measures, reports the progress at EHSQ management reviews and other occasions, and continuously conducts improvement activities.

Number of Plants Obtaining OHSMS Third-Party Certification (Organizations)

(As of December 31, 2021)

Coverage	Number of certified plants
Japan	7
Asia (excluding Japan)	14
Europe	53
the Americas	3
Total	77

Groupwide Initiatives

Developing a System to Collect Global Occupational Accident Data

The AGC Group has developed a system for collecting the standardized occupational accident data of the Group globally, including that of its business partners at business sites, and for sharing this information laterally. Due to these initiatives, over the long term, incidents have trended downward. In the past few years, the number of occupational accidents has leveled off, although some areas have experienced an increase.

Number of Occupational Accidents (AGC Group, Including Business Partners)

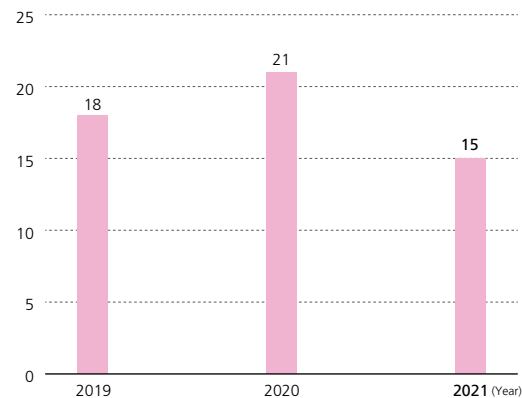
Number of Fatalities Due to Labor-Related Injuries

	2019	2020	2021
AGC Group employees	0	0	0
AGC business partners	1	0	0

Number of Accidents Requiring Leave

Japan

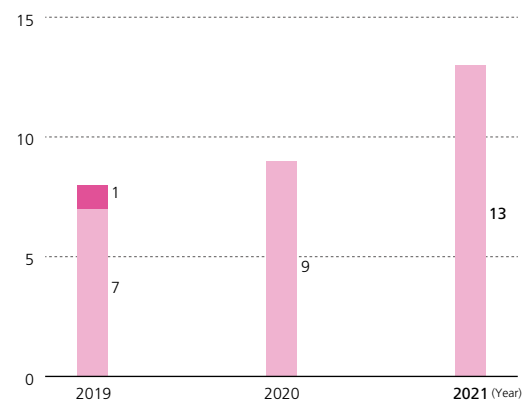
(Number of accidents)



■ Fatalities ■ Accidents requiring leave

Asia (other than Japan)

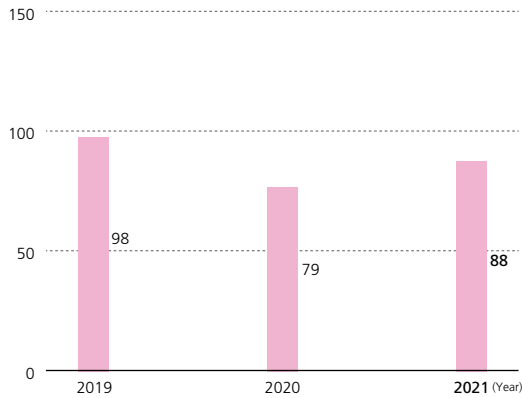
(Number of accidents)



■ Fatalities ■ Accidents requiring leave

Europe

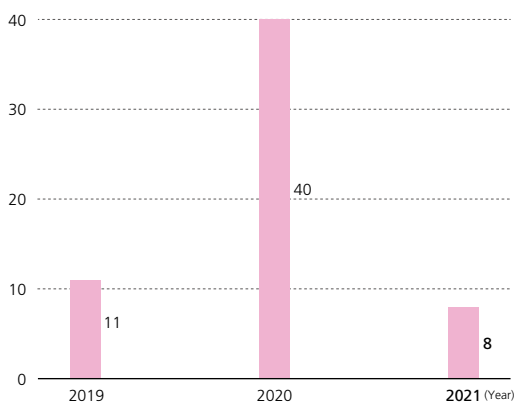
(Number of accidents)



■ Fatalities ■ Accidents requiring leave

The Americas

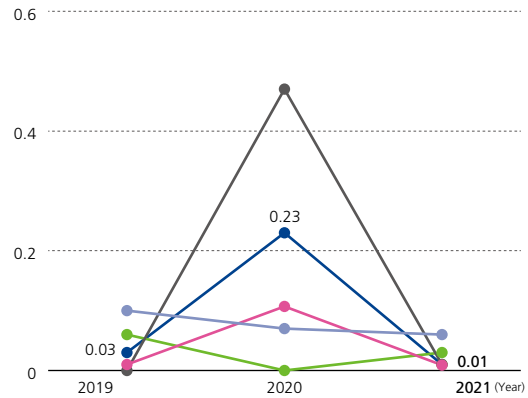
(Number of accidents)



■ Fatalities ■ Accidents requiring leave

Notes: 1 "Accidents requiring leave" are occupational accidents in which the affected individual is forced to take a leave of absence for one day or more under the direction of a physician or other person. However, "accidents requiring leave" do not include cases in which employees take a leave of absence due to hospitalization for examinations.
 2 The assessment criteria for accidents requiring leave differ in Japan, other parts of Asia, Europe, and the Americas. Consequently, a simple comparison of the numbers of accidents requiring leave cannot be made.

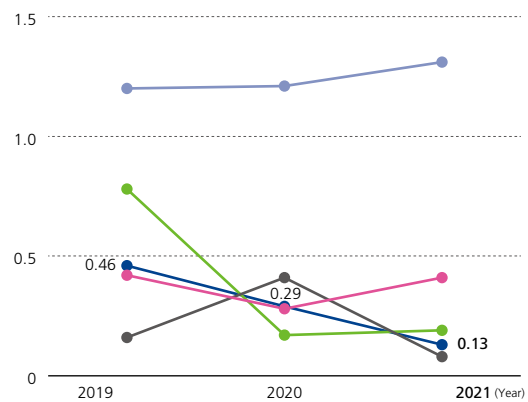
Severity of Accidents (AGC and business partners)



● AGC overall ● AGC business partners ● AGC employees
 ● Member companies of the Japan Chemical Industry Association
 ● Manufacturing industry overall

Notes: 1 "Severity" expresses the severity of accidents as the number of days lost per 1,000 working hours.
 2 "AGC overall" is the combined figure for AGC employees and employees of AGC business partners.

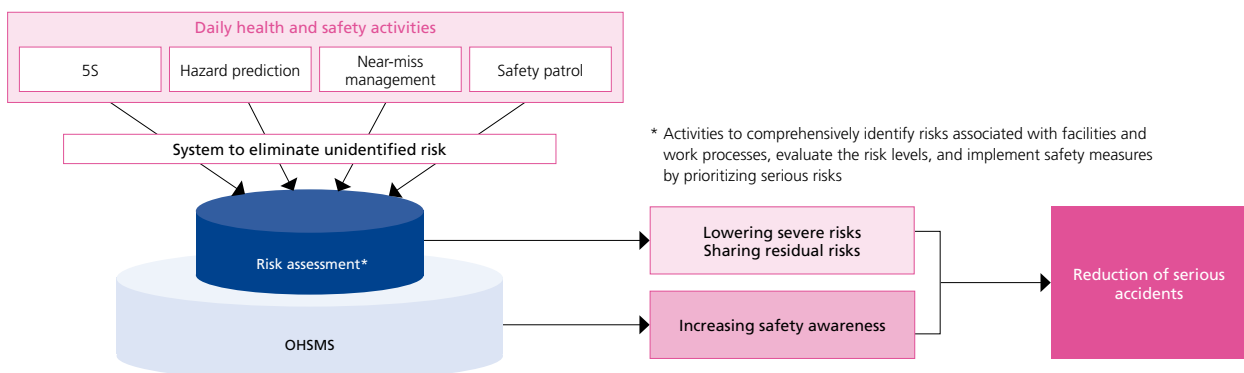
Frequency of Accidents Requiring Leave (AGC and business partners)



● AGC overall ● AGC business partners ● AGC employees
 ● Member companies of the Japan Chemical Industry Association
 ● Manufacturing industry overall

Notes: 1 "Frequency" expresses the frequency of occupational accidents as the number of fatalities and injuries per one million working hours.
 2 "AGC overall" is the combined figure for AGC employees and employees of AGC business partners.

The AGC Group's Health and Safety Management Initiatives



* Activities to comprehensively identify risks associated with facilities and work processes, evaluate the risk levels, and implement safety measures by prioritizing serious risks

■ Promoting Safety Activity-Related Information Sharing That Transcends National and Departmental Boundaries (Architectural Glass Asia Pacific Company, and Automotive Company)

Under normal circumstances, the AGC Group (Asia) holds meetings for employees in charge of safety from all relevant countries. As in the previous fiscal year, however, fiscal 2021 saw the cancellation of business trips to meeting destinations due to restrictions arising from COVID-19, which resulted in the adoption of an online meeting format. Issues requiring reform are shared through activities that highlight the Group's stance on health, safety, and the environment and each participating country aspires to improve their safety initiatives through these meetings.

■ Continuing to Advance Risk Assessments

The AGC Group is taking steps to improve its risk assessments with an initiative to reduce the risk of occupational accidents. The AGC Group (Japan) trains managers and supervisors and implements routine training for employees who conduct risk assessments at manufacturing sites. In 2009, the Group began safety enhancement activities, selecting qualified individuals from those in charge of development, manufacturing, equipment, or other important matters at each manufacturing site to conduct intensive education on risk assessments and daily safety activities.* In fiscal 2021, 32 people completed the program, and these individuals now work as core safety personnel. There are currently over 400 core safety personnel operating across all business sites. At the AGC Group in Asia, certain managers and engineers in each country and region are designated as key safety persons. These individuals receive one week of group training focused on basic concepts of risk assessments and international standards for machinery safety. Although restrictions arising from COVID-19 since fiscal 2020 have created challenging conditions for holding training at the AGC *Monozukuri* Training Center and business trip destinations, the Group has been holding online seminars.

* Health and safety conventional activities such as 5S (*seiri* (sort), *seiton* (set in order), *seiso* (shine), *seiketsu* (standardize), and *shitsuke* (sustain)) activities, risk prediction, near-miss management (*hiyari-hatto*), and safety patrols

■ Promoting Machinery Safety by Introducing Safe Manufacturing Machines

Reducing risks associated with manufacturing machinery is essential for realizing safe production workplaces. Building on efforts to minimize machine-related risks through established risk assessment methods, the AGC Group is working to ensure the installation of safer manufacturing machinery by taking into consideration additional risk assessment protocols at the design stage via advanced safety inspections. In Europe, risk-reduced facilities were introduced based on the local law-enforced system of CE marking.*¹ Additionally, the crucial role of risk assessments by facility users is stipulated in the European Union framework. In Japan and the rest of Asia,

the Group encourages all managers responsible for safety to obtain qualifications as a safety assessor and safety basic assessor under a certification system,*² so they have a full understanding of international safety standards when adopting plans and machinery. The number of employees with this certification rose further in fiscal 2018, with a particularly large increase in the number of employees from Asian Group companies obtaining safety.

*¹ Products with the CE mark are certified as meeting the standards set by all member states of the European Union.

*² The safety assessor certification is awarded for understanding and possessing the practical skills related to machinery safety. Based on international safety standards and developed by Nippon Electric Control Equipment Industries Association and other organizations, the certification is verified by a third party. Three levels of certification are available: safety lead assessor, safety assessor, and safety sub-assessor. The certification for the assessment of basic safety, which targets operators of machinery and tests fundamental knowledge of machinery safety, is verified by a third party.



Training for safety basic assessor certification (Taiwan)

■ Continuing to Advance Risk Assessments

The AGC Group strives to prevent adverse health effects, fires, and explosions from occurring by managing chemical substances used at each worksite by appointing experienced chemical substance managers, conducting appropriate risk assessments, and implementing risk-reduction measures. For risk assessments of chemical substances, the Group created its own standardized assessment method and has made it known Groupwide by conducting in-house training at production sites and other worksites. Based on the Globally Harmonized System of Classification and Labeling of Chemicals, the Group's assessment method is a simple and useful way to assess the risks, danger, or toxicity of chemical substances and can be applied in any country worldwide. In addition, the Group promotes the implementation of risk assessments of work areas based on actual surveys of workplaces.



Chemical Substance Risk Assessment training

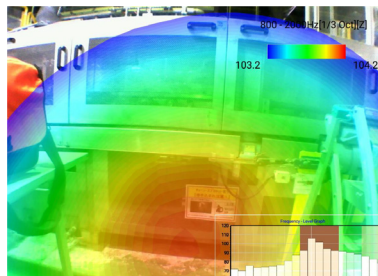
■ Improving Occupational Health Standards

With the goal of preventing adverse health effects associated with work processes, the AGC Group has established global standards and implements a range of measures, including work environment measurements, risk assessments, risk-reduction countermeasures, and health checkups. At our Aichi Plant, noise generated during the manufacture of tempered glass for automobiles had become an issue. Although we had struggled to identify the extent of the noise and where it originated, we were able to clarify the source and the extent when advancing measures to reduce such noise by using digital noise visualization equipment (acoustic cameras) in addition to the conventional graphical display of numerical values. As a result, we have accurately soundproofed the affected area by enclosing it, thereby effectively improving the workplace environment.

■ Improving the Level of Safety Awareness

The AGC Group is implementing stratified education to raise safety awareness. The Human Error Prevention Manual, among others, is a proprietary textbook that has been translated into multiple languages for use in training courses at each plant. The Group also conducts practical training for safety patrols in Asia, including Japan, to give workers the skills needed to identify latent but serious workplace risks while on patrols. As part of the training, participants conduct safety patrols from the perspective of machinery safety and relevant laws and regulations along a mock production line with more than 140 flaws. This firsthand experience in machinery safety fosters the ability to identify the risks caused by unsafe situations in facilities. Since fiscal 2012, this training has been conducted for safety managers throughout Japan, and several safety managers from Group companies outside of Japan have also received the training. A safety patrol facility has been partially deployed at PT Asahimas Flat Glass Tbk, in Indonesia, mainly focused on providing similar training for safety managers in the region. Furthermore, a meeting to announce improvement initiatives is held every year in the fall by the Purchase & Logistics Division of AGC and AGC Logistics Co., Ltd. (AGL). At the meeting, improvements to safety and quality regarding the distribution of goods by business partners (BPs) and AGL are announced.

To promote a common culture of safety between AGL and BPs, a full circuit inspection and “finger-pointing and calling” safety checks are carried out at each BP and around their trucks.



Identifying the source and extent of noise using an acoustic camera



Practical safety patrol training

■ Implementing Hazard Simulation Training

The AGC Group is implementing safety sensory education that simulates many occupational hazards, such as getting caught in machinery, receiving electric shocks, cut wounds, chemical burns, and dangers arising from objects falling, spilling, and overturning, with the aim of enhancing safety awareness and eliminating unsafe behavior leading to occupational accidents. In recent years, content that allows users to experience dangerous situations through virtual reality (VR) technology using simple devices has also increased. Currently, the AGC Group is equipping the Yokohama Technical Center (YTC) and a number of business sites in Japan and overseas with several types of safety sensory equipment, in addition to using VR technology to facilitate experiences of hazards inherent at those sites. The Group is also promoting the training and upskilling of instructors who can lead safety sensory education on a regular basis.



Leak simulation of hazardous chemical materials (Indonesia)



Instructor upskilling (Japan)



Getting a physical sense of the impact of a fall through numerically based visualization



Instructor development (China)



Experiencing getting caught in a revolving belt and roller at the Yokohama Technical Center

AGC Initiatives

Labor Union Participation in Health and Safety Measures (AGC)

At AGC, based on collective labor agreements, labor unions' advice and guidance regarding safety and health are considered. Business partners (BPs) working with us at business sites participate in the meetings of safety and health committees held at the business sites. Safety officers and employee representatives are given regular opportunities to exchange opinions, which are then reflected in various safety and health measures.



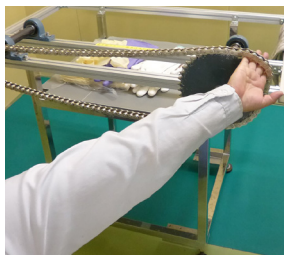
Experiencing getting caught in a revolving belt and roller at the Yokohama Technical Center



Experiencing the danger of a forklift crash through the use of virtual reality technology in Japan



Experiencing the danger of a forklift crash through the use of virtual reality technology in Japan



Experiencing getting caught in a chain in Japan



Experiencing getting caught in machinery (China)



Experiencing a robot crash through the use of virtual reality technology in Japan

Creating a Comfortable Workplace

Fundamental Approach

Through occupational health and safety activities, the AGC Group promotes the creation of a pleasant workplace environment based on its Basic Occupational Health & Safety Policy. Further, we have established the AGC Health Declaration, and we are pursuing initiatives aimed at maintaining and enhancing employee health.



Note: Initially, AGC will rigorously inform its employees about and implement measures based on the AGC Health Declaration. In the future, the Company will consider adopting the same approach with respect to the employees of Group companies in Japan and overseas.

Management Structure

Occupational Health Management through Divisional Cooperation

Based on the Basic Occupational Health & Safety Policy and the AGC Health Declaration, the AGC Group promotes health management measures for creating a comfortable workplace environment in cooperation with related divisions. This is accomplished by placing the general manager of the Human Resources Division in charge of health management promotion and appointing and assigning a head industrial physician, with related divisions collaborating for extra support.

AGC Groupwide Initiatives

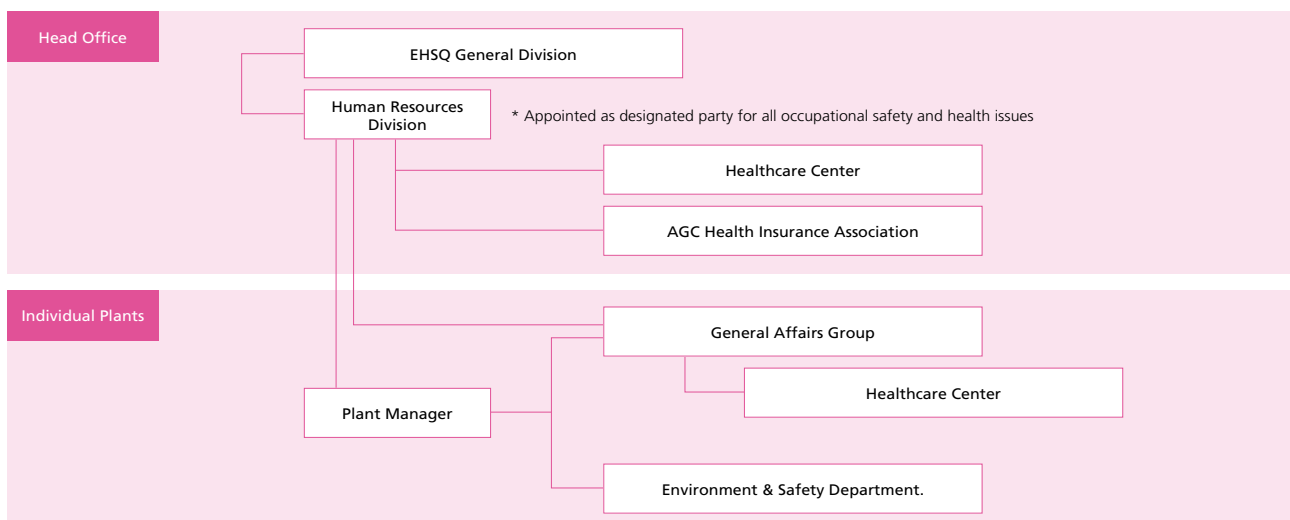
AGC Group General Affairs and HR Personnel Network Conference (AGC Group (Japan))

The AGC Group holds regular conferences for general affairs and HR personnel from each Group company in Japan. Outside lecturers are invited to speak, providing a chance for such personnel to deepen their understanding on the latest trends in labor laws. Through discussion, the participants also review health management, workstyles, and Group policies on matters including harassment prevention. In addition to the conferences, the Group regularly checks employee working hours and the status of responses to legal changes, thus aiming to enhance collaboration within AGC. In response to growing attention from society regarding compliance, the AGC Group is promoting the creation of comfortable working environments through occupational safety and health activities for everyone at the Group.

The AGC Group's Health and Safety Management Initiatives

Chief Promotion Officer: Senior Executive Vice President

Promotion Officer: General Manager of the Human Resources Division



Furthermore, we expanded the scope of participation of the AGC Walk in fiscal 2020, a walking event launched in fiscal 2019, to Group companies in Japan, positioning it as a core event for us to unite as one group to promote health and productivity management.

AGC's Initiatives

Promoting Health and Productivity Management

- Maintaining and improving the physical and mental health of every employee improves employee vitality and productivity and is a fundamental element in aiming to become a company that puts into practice its human resource management slogan—"AGC People: the driver of our growth!"
- This is a strategic initiative to ensure that all employees working at the AGC Group can continue to maximize their potential.



Health and Productivity Management Goals

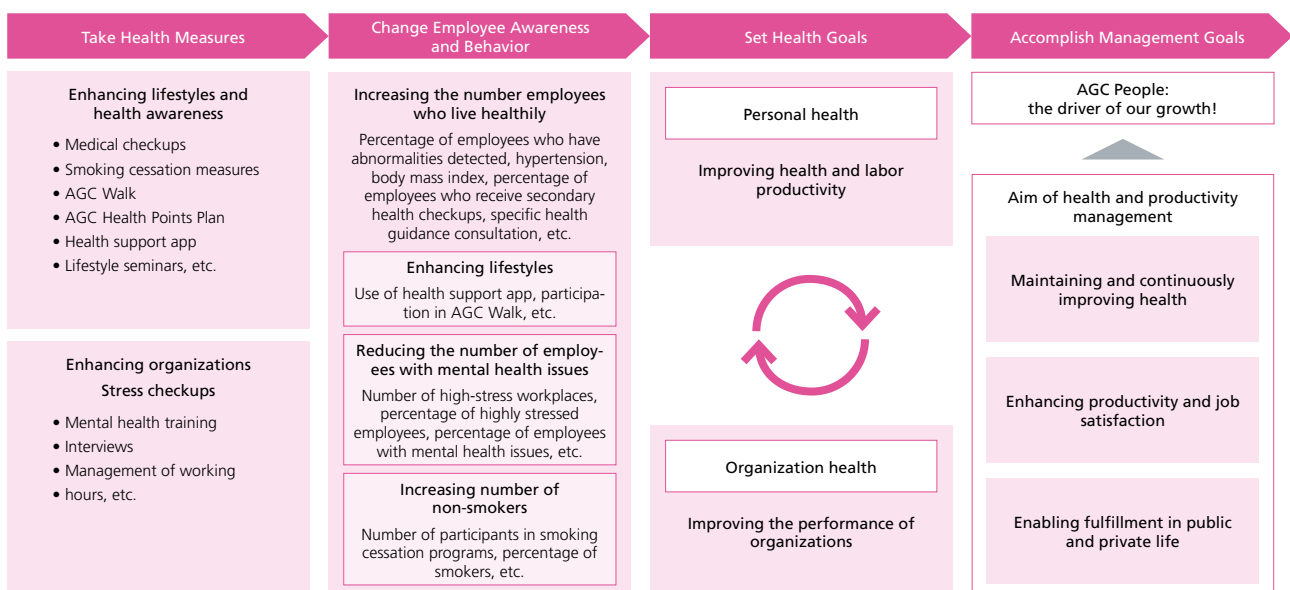
- Continuously maintaining and promoting health
By looking after their health, all AGC employees should be able to continue to work actively as they get older.
- Improving productivity and job satisfaction
All AGC employees should be able to work productively by utilizing a number of workstyles and improving their physical and mental condition. Employees should be able to make the most of their potential and derive satisfaction from their work.
- Enriching public and private life
Every AGC employee should have a fulfilling life at the Company and at home, deriving satisfaction from both work and private life.

When its motivated human resources can maximize their potential, the Company becomes stronger as a whole.

The Focuses of AGC's Initiatives

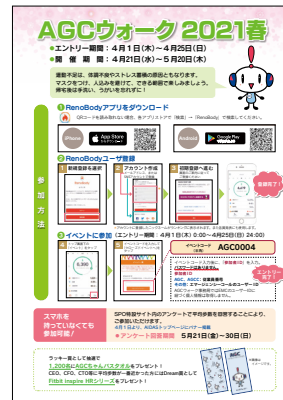
While advancing the initiatives below to maintain and enhance health in accordance with the AGC Health Declaration, the Group will further develop its Health and Productivity Strategy Management Map, establish key performance indicators, and proceed through plan-do-check-act cycles.

Health and Productivity Management Strategy Map



Progress of Activities to Maintain and Enhance Health

- Enhancement of follow-ups for employees who have abnormalities detected during physical examinations
As! a measure to reduce the percentage of employees who have abnormalities detected, we are placing particular emphasis on improving the percentage of employees who receive secondary health checkups (fiscal 2020: 92.0% ⇒ fiscal 2021 99.0%). Although this increase in secondary health checkups has yet to reduce the percentage of employees who have abnormalities detected, we will continue emphasizing these checkups. (The entire cost of the secondary health checkups is borne by the Company.)
 - Percentage of employees receiving regular health checkups
Fiscal 2021: 100% ⇒ Continue as current
 - Percentage of employees receiving secondary health checkups
Fiscal 2020: 92.0% ⇒ Fiscal 2021: 99.0% ⇒ Aim for 100%
 - Percentage of employees who have abnormalities detected
Fiscal 2020: 19.5% ⇒ Fiscal 2021: 19.7% ⇒ Aim for 16.0% by fiscal 2025
- Preventing mental health issues
 - Percentage of employees receiving stress checkups
Fiscal 2020: 97.0% ⇒ Fiscal 2021: 97.0% ⇒ Aim for 100%
 - Conducting seminars on self-care and training for managers to look after the health of their employees
- Ensuring that employees are not exposed to secondhand smoke and reducing the employee smoking rate
 - Complete indoor smoking ban
Achieved at some business establishments in fiscal 2019
To be achieved Companywide in fiscal 2021
 - Number of smoking areas
Fiscal 2021: decrease of 60.0% compared with fiscal 2019
 - Banning the selling of tobacco at business sites (fiscal 2019)
 - Smoking rate
Fiscal 2020: 25.7% ⇒ Fiscal 2021: 24.1% ⇒ Aim for below 20.0% by fiscal 2025
- Establishing of exercise habits (walking)
Fiscal 2021: 3,400 participants
- Raising awareness of health
We are raising the health awareness of all employees even further through a plan and an app, both of which were introduced in fiscal 2021. While the AGC Health Points Plan incentivizes individual health activities, the health support app serves as a tool for personal health management.



Flyer of AGC Walk

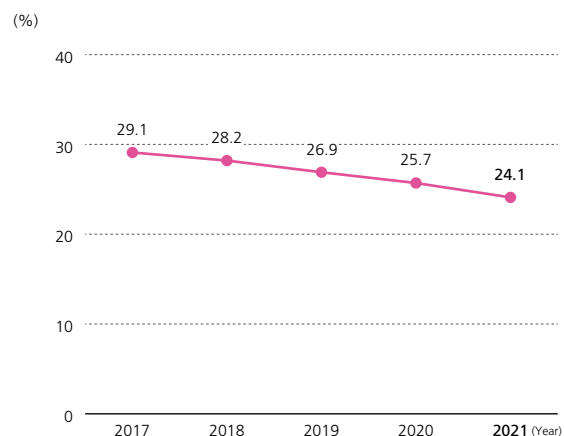


Certified as a White 500 Company in the 2022 Health & Productivity Outstanding Organizations Recognition Program



Health support app

Percentage of Employees Who Smoke



Industrial Safety and Security

Fundamental Approach

The AGC Group, which develops its businesses in local communities, believes that ensuring safety and security is a major prerequisite for achieving sustainable growth. Based on this belief, the AGC Group has established the AGC Group Industrial Safety & Security Policy to promote various issues surrounding industrial safety and security.

AGC Group Industrial Safety & Security Policy

(Established on February 7, 2003, and revised on January 1, 2019)

At the AGC Group, we will pursue our AGC Group Vision **“Look Beyond”** with the strong belief that “actively engaging in security and disaster prevention activities is our fundamental obligation as a company developing businesses in local communities.” We commit to adhere to the following key principles: 1. Comply with relevant internal and external rules concerning industrial safety and security rules worldwide, 2. Develop and continuously improve management initiatives to prevent incidents associated with industrial safety and security, and 3. Strive to communicate with internal and external stakeholders proactively.

Management Structure

In addition to striving to prevent accidents and other crises, such as unforeseen accidents, the AGC Group is working under the AGC Group Industrial Safety & Security Policy to prevent the escalation of accidents that do occur by promoting countermeasures to deal promptly and accurately with such crises.

The Group promotes risk reduction and preventive measures in its business activities by applying a plan–do–check–act (PDCA) cycle. Each business division promotes fire prevention, countermeasures for industrial safety accidents, and risk assessments for natural disasters based on action plans drawn up for that year by the corporate EHSQ General Division. In addition to these measures, the Group strives for continuous improvement through internal audits that monitor the extent to which the above measures have been carried out.

In the Chemicals business, the Chiba Plant and the Kashima Plant in Japan are business sites that have been certified to utilize high-pressure gas. To promote a higher level of voluntary safety at business sites certified to utilize high-pressure gas, AGC has established a safety management system headed by the CEO and with the general manager of the EHSQ General Division and the president of an in-house company as the officers in charge of safety.

Groupwide Initiatives

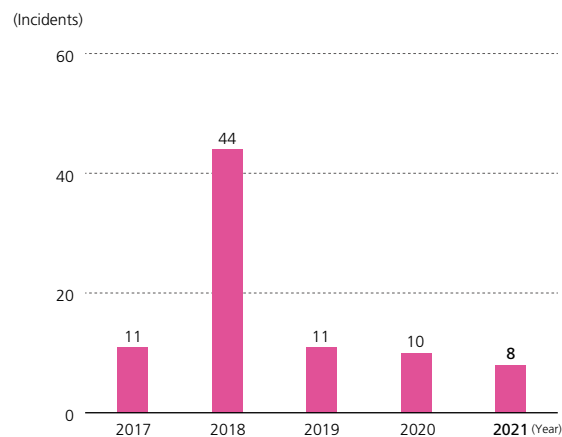
Preventing Accidents through Pre-Assessment in Facility Development

When constructing, expanding, or modifying facilities that are determined to be liable for risk, the Group conducts industrial safety and security-related risk assessments and confirms the intrinsic safety of facilities based on the Group's Prior Safety Assessment System. This occurs at the design stage and also during test operations when construction is completed. In addition, when a safety assessment at a chemical plant indicates a high level of danger, a risk assessment is carried out using hazard and operability (HAZOP) studies, emergency shutdown (ESD) HAZOP studies, and procedural HAZOP studies. These studies establish scenarios for accidents that could be triggered by discrepancies in process equipment (pressure fluctuation, valve malfunction, etc.), errors in non-regular operations, and errors in operational procedures in emergency situations (emergency shutdowns).

Prevention of Fire and Prevention of Recurrence

The AGC Group is working to continuously improve fire prevention activities at its domestic and overseas sites through environmental, industrial safety, and security preservation audits conducted by each business division and the EHSQ General Division. In 2021, eight fires broke out at Group sites; however, through quick initial response measures, none affected local communities or led to fatal incidents.

Number of Fires* (AGC Group)



* Based on the number of fires that needed to be put out by fire extinguishers, the total number of fires is the number of such fires with effects that made the reporting of the fires to a governmental agency necessary.

■ Initiatives to Improve Self-Managed Industrial Safety and Security Capabilities

The AGC Group launched the AGC Group Industrial Safety & Security Policy with the goals of reducing risks related to industrial safety and security and strengthening its self-managed industrial safety and security capabilities. Under this policy, the Group continuously improves such capabilities by implementing third-party assessments and clarifying items for improvement based on assessment results. The assessments are as follows: 1) The Japan Industrial Safety Competency Center carries out assessments of self-managed industrial safety and security capabilities at designated worksites in Japan managed under the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities; 2) the Group implements safety culture assessments (adoption of the questionnaire format mainly developed by Professor Kenichi Takano of Keio University and Associate Professor Akira Tose of Niigata University) at medium-sized manufacturing plants in Japan, other countries in Asia, and Europe; and 3) the Group conducts activities to improve industrial security capabilities at processing and assembly plants under the guidance of local fire departments. Going forward in-house company and strategic business unit will unite to roll out these assessments not only in Japan but also globally.

1) Designated worksites in Japan managed under the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities: Assessments of self-managed industrial safety and security capabilities by the Japan Industrial Safety Competency Center. Assessments are carried out at the Chiba and Kashima plants, the Kansai Plant (Takasago Factory), and AGC Ceramics Co., Ltd. (Takasago). In 2022, an assessment is scheduled to be carried out at the AGC Yokohama Technical Center. The Group reconfirmed the problems with the safety foundations and safety culture at these plants that came to light through the safety assessments, drew up a three-year improvement plan, and is in the process of rolling out improvement activities. In addition to such assessments at manufacturing plants, AGC plans to improve comprehensive industrial safety capabilities, including those of headquarters, by carrying out interviews of executives based at headquarters (those in general manager positions at each company) by an expert from the Japan Industrial Safety Competency Center. We believe that these new initiatives can also contribute to research efforts into the comprehensive industrial safety capabilities of Japanese industry.

2) Medium-sized manufacturing plants: Safety culture assessments (adoption of the questionnaire format mainly developed by Professor Kenichi Takano of Keio University and Associate Professor Akira Tose of Niigata University). The Group has concluded a joint research contract with Niigata University on safety culture assessments, under which it implements assessments of more than 35,000 employees in Japan, other countries in Asia, and Europe.

● 2021–2023 Assessment (Implementation) Plan

Year	Japan	Asia	Europe	Number of plants assessed (implemented)
2021	6	18	0	24
2022	9	7	1	17
2023	2	5	10	17

With respect to safety culture assessments, the Group implements improvement activities based on a three-year improvement plan that reflects the strengths and weaknesses revealed by assessments and will monitor the effect of improvements by carrying out second assessments in about three years' time. From 2023 onward, we plan to implement full-fledged measures to promote safety culture assessments and organizational culture improvement activities in Europe and the Americas.

Other activities under the joint research contract with Niigata University include accepting interns, building the foundations of safety culture through safety culture assessments, and dispatching employees to Niigata University as lecturers. In addition, with the aim of fostering a safety culture, we conduct exchanges with other companies and exchange information and opinions on progress in advancing safety culture assessments.

3) Processing and assembly plants: Activities to improve industrial security capabilities under the guidance of local fire departments. In these activities, processing and assembly plants conduct education and training focused on fire prevention with the cooperation of municipal fire departments. We have already commenced these activities at the Eniwa and Tosu plants of AGC Glass Products Co., Ltd., which has business sites throughout Japan.

Education and Training for Security Incidents

When an industrial safety and security incident occurs, it is necessary to minimize the impact on employees and local communities. The AGC Group conducts planned education and training at its business sites with the objective of minimizing the impact on employees and local communities in the event of an industrial safety and security incident occurring. At the Chiba and Kashima plants, in particular, which are located in regions with industrial complexes, we implement the following education and training based on annual plans.

Education

- Industrial safety and security education (for employees and employees of business partners)
- Basic first-aid training courses (in-house)

Training

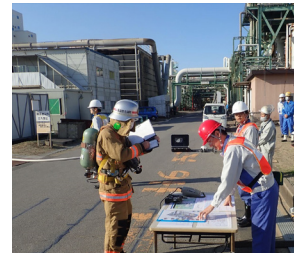
- Indoor fire hydrant training (initial firefighting tournament)
- Training on the reporting of matters anomalous with the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities (training on the emergency call-up of divisional employees)
- Training on responding to natural disasters, including earthquakes (evacuation and safety confirmation drills)
- Safety confirmation training using the emergency call (EMC) system (the AGC Group in Japan)
- Fire extinguisher handling training
- Training based on the International Convention for the Safety of Life at Sea (SOLAS)
- Combined disaster prevention training at industrial complexes
- Joint disaster prevention and reporting training at offshore industrial complexes
- Offshore disaster prevention training (oil fence extension training)
- External education and training

Plant contests

- Outdoor fire hydrant handling techniques contest
- Respirator application contest



Oil fence extension training at the Chiba Plant



Fire prevention training in combination with the fire department at the Kashima Plant



Earthquake and tsunami preparedness training at the Chiba Plant



Fire prevention training in combination with the fire department at the Kashima Plant



Fire prevention training with the fire department at AGC Glass Products' Eniwa Plant



Fire prevention training at the Chiba Plant

Supply Chain

Fundamental Approach

As described in the AGC Group Charter of Corporate Behavior, the AGC Group strives to establish mutually beneficial and appropriate relationships with business partners, ensuring that the principles of compliance with the charter are in line with the fundamental stance of the AGC Group. By so doing, the Group seeks to promote good supply chain management.

Management Structure

The Purchase & Logistics Division plays the main role in continuing the stable procurement of raw materials and other materials. The division also conducts initiatives to solve social issues involving human rights, labor practices, and the environment with business partners and the rest of the supply chain. The Group has established the AGC Group Purchasing Policy, which clearly states the Group's responsibility to help realize a sustainable society. The Group has made the policy available to business partners worldwide by posting it on the AGC Group website and has asked them to understand and cooperate with the policy.

In accordance with the aforementioned policy, from 2020 to 2021 we conducted a questionnaire on sustainable procurement. We received responses from all 126 target business partners and identified the locations of potential risks. Also, we requested that business partners make improvements in areas where they had low scores.

Groupwide Initiatives

■ Point of Contact for Suppliers Regarding Procurement Activities

The AGC Group works to ensure the transparency of purchasing transactions and the prevention of fraud. As part of these efforts, we have set up a point of contact for suppliers regarding procurement activities. The contact can be used by business partners to point out problems related to transactions with AGC Group employees by e-mail or regular mail, and the issues raised are kept strictly confidential and resolved promptly.

🌐 Point of Contact for Suppliers Regarding Procurement Activities

■ Regular Review of the Content of Contracts

To promote good supply chain management, the AGC Group uses the most up-to-date contract with relevant CSR clauses when making new contracts or renewing contracts with business partners.

AGC Group Purchasing Policy

(Established in 2009 and revised on January 1, 2020)

The AGC Group pursues the Shared Values outlined in the AGC Group Vision **“Look Beyond”** and the AGC Group Charter of Corporate Behavior and will regulate its performance regarding purchasing, which is explicitly stated in the AGC Group Purchasing Policy below.

1. Basic Purchasing Principles

1. Fair and equitable transactions

Our procurement policy is to consistently search for innovative technologies, products, and services with a fair and equitable manner globally.

2. Compliance to related laws and regulations, and behavior considering safety, the environment, and human rights

In carrying out purchasing activities, AGC will comply with the applicable laws and regulations of each country and international norms, act with integrity and give due consideration to safety, the environment, natural resource conservation, and human rights. In particular, in order not to promote conflicts or foster human rights violations through the procurement of mineral resources, through the identification of conflict minerals (tin, tantalum, tungsten, and gold) and cobalt as high-risk minerals, we will promote responsible mineral procurement through the adoption of smelters and refiners that have been certified as not using minerals that are related to armed conflict or acts of injustice such as human rights violations.

3. Partnership with business partners

AGC will establish long-term, mutually prosperous partnerships to produce better products with its business partners. To this end, we will endeavor to keep close communication with our business partners to build and enhance our trusting relationships.

4. Protection of information, intellectual property, and other assets of business partners

AGC will properly manage and protect the proprietary information, intellectual property, and other assets of our business partners while procuring goods and services.

2. Criteria for Selecting Business Partners

AGC will apply key criteria to evaluate and select business partners, as follows.

1. Sound management, steady supply, and flexibility in accordance with fluctuating demand;
2. Appropriate quality, pricing, and punctual delivery, with consideration for safety and the environment and technical service levels;
3. Making endeavors to realize each item of our “Request for Cooperation in Sustainable Procurement” on page 84.

3. Request for Cooperation in Sustainable Procurement

AGC strives to be a company trusted by all of its stakeholders, a company that meets the expectations of the global business community to grow and develop responsibly, and a company that significantly contributes to a healthier global society. In order to fulfill our social responsibilities toward the realization of a sustainable society as the AGC Group, we would like to promote our efforts together with the companies linked to our supply chain. Accordingly, we would like to share with and request our business partners to comply with and enforce the following points and would like to ask for their understanding and cooperation.

1. Legal compliance, fairness, and integrity

To comply with laws and international norms of each country and region, conduct fair transactions, and execute the following:

- Maintain healthy and normal relations with political entities and governments and do not give or receive inappropriate profits in relation to stakeholders.
- Do not engage in activities that hinder fair competition in the market or cause abuse of superior bargaining position.
- Establish a management system for the import and export of goods and technologies regulated by laws and regulations of each country and region and carry out proper export procedures.
- In the procurement of mineral resources contained in products, identify conflict minerals (tin, tantalum, tungsten, and gold) and cobalt as high-risk minerals and promote responsible mineral procurement through the adoption of smelters and refiners that have been certified as not using minerals that are related to armed conflicts or acts of injustice such as human rights violations.
- Do not have any relationship with anti-social forces.
- Establish and put into practice a mechanism such as policies, organizations, guidelines, reporting systems, and educations, to enforce thorough compliance and to prevent and detect inappropriate practices at an early stage.

2. Environment, safety, and quality

To provide high-quality, safe, and environmentally friendly products and services, reduce environmental burdens, ensure product and workplace safety, and implement the following:

- Comply with the laws and regulations of each country and region regarding the environment and appropriately manage chemical substances contained in products and chemical substances discharged in the external environment based on laws and regulations.
- Strive to protect the environment and natural resources and reduce the final disposal volume of waste.
- Establish an environmental management system and continuously operate and improve it.

- Contribute to the prevention of global warming and strive to save energy.
- Work for safety, security, and disaster prevention and work to prevent accidents.
- Ensure products that meet the safety standards stipulated by the laws and regulations of each country and region and provide accurate information on items that may cause danger or health damage to users.

3. Human rights and labor

Respect the dignity and human rights of all people and do the following:

- Do not discriminate against people regardless of race, ethnicity, religion, nationality, political affiliation, age, gender, disability, marriage, sexual preference, or any other factors.
- Do not engage in acts such as sexual harassment and power harassment that inflict damage on the personality of others or harm personal dignity.
- Do not allow forced labor, slave labor, child labor, unfair low-paid labor, and do not participate in human rights violations.
- Respect employee rights and build and maintain good relationships with employees through discussion and dialogue.
- Comply with the laws and regulations of each country and region regarding employee working hours, holidays, paid leave, grants, and wages.
- Establish an environment where employees can work safely and physically and mentally healthily.

4. Risk, information, and intellectual property management

Establish a system to avoid risks to business and execute the following for information and intellectual property management.

- Establish a business continuity plan that provides measures to enable business continuity or early recovery when an unforeseen circumstance such as a disaster or accident occurs, and upon such occurrence, cope with it promptly and disclose accurate information.
- Make proper recording and reporting necessary for the business activities based on the facts and, as well as keeping records, practice appropriate information management so that confidential information of parties such as customers, business partners, and the Company, including personal information, will not be leaked.
- Disclose information such as financial status, business results, and details of business activities appropriately to stakeholders.
- Properly manage own and other parties' intellectual properties and do not obtain third-party trade secrets by illegal means or perform any act that infringes on the intellectual property of a third party.

■ Initiatives in Concert with Our Business Partners

The AGC Group regularly conducts CSR procurement surveys. To better understand the implementation of CSR activities at its business partners, the Group has created questionnaires and guidelines used to confirm the progress of CSR activities.

Policy Briefing for Business Partners

Since 1997, the AGC Group has held briefing sessions for its business partners to deepen communications with its partners and expand and unify its business activities across the supply chain. In 2019, around 270 participants from 140 companies in various industries in Japan and overseas attended the session. Business partners were presented with a letter of appreciation for their ongoing cooperation, and the then AGC Group CEO, Takuya Shimamura, gave a presentation on the Group's medium-term management plan. Following the meeting, a lively exchange of views took place among business partners, AGC Group executives, and AGC Group division heads. (The details above relate to the 2019 policy briefing as the 2020 and 2021 policy briefings were canceled, while only a letter of appreciation presentation ceremony was held in 2020.)



Letter of appreciation presentation ceremony

■ Promoting Green Procurement

In 2020, the Group revised the AGC Group Integrated Green Procurement Guidelines, which provide a common approach for all business divisions. In accordance with these guidelines, green procurement guidelines for each business division were created. Based on each business division's green procurement guidelines, business partners' environmental management and the inclusion of chemical substances with high levels of environmental impact are checked by requesting the completion of prescribed forms. Moreover, these guidelines are used to facilitate green procurement of raw materials and other materials suited to each business.

🌐 Reference, website
[AGC Group Integrated Green Procurement Guidelines](#)

■ Initiatives Related to High-Risk Minerals (Conflict Minerals and Cobalt)

As part of its efforts to realize sustainable and responsible supply chains, the AGC Group procures minerals responsibly. When procuring minerals that could potentially be associated with conflicts (tantalum, tin, tungsten, and gold) and high-risk minerals such as cobalt, we confirm whether there is any risk of the minerals being associated with human rights violations related to the mining, transportation, and trade of minerals or with support for armed groups in conflict-affected and high-risk areas. Further, we use smelters and refineries that are certified as not using minerals for which there are concerns in relation to the aforementioned issues. With the cooperation of related business partners, we identify risks through due diligence and take corrective action if a significant risk is found in a supply chain.

In 2021, we established the AGC Group Responsible Minerals Sourcing Policy, which we posted on our website to make it available to business partners worldwide. Further, we requested the cooperation of business partners in achieving this initiative for the responsible procurement of minerals.

In addition, as a result of conducting a survey on the procurement of high-risk minerals and products containing high-risk minerals, which targeted AGC Group business sites worldwide, the Group was able to identify 383 upstream refiners, of which 276 were certified by the Responsible Minerals Initiative. Going forward, we will continue to identify and take corrective actions in response to risks.

🌐 Reference, website:
[AGC Group Responsible Minerals Sourcing Policy](#)

■ Hosting Workshops on the Environment, Safety, and Compliance

AGC regularly hosts workshops on the environment, safety, and compliance for major business partners. The Group also holds lectures on strategies and environmental targets in relation to its sustainability management, organizes gatherings aimed at sharing information on each Group company's activities, and conducts tours of outstanding plants. Also, the Group organizes various training programs for its business partners with a view to promoting manufacturing and personnel development that is based on an awareness of the entire supply chain.

■ Assessing Business Partners' Satisfaction with the AGC Group through an Annual Survey

Since 2008, AGC has been conducting an annual survey of its major business partners to assess the level of satisfaction they have in their relationships with the AGC Group. The purpose of the survey is to build relationships of trust with these business partners and create a mutually beneficial environment for offering better products. The anonymity of the survey is guaranteed so that respondents can feel comfortable in answering questions candidly and honestly. About 200 business partners have been surveyed each year, and the overall results were shared with business partners who responded to the survey and relevant personnel at AGC.

Fair Transactions

Fundamental Approach

In its AGC Group Charter of Corporate Behavior, the AGC Group stipulates that it will conduct appropriate transactions and otherwise conduct its business in accordance with the principle of fair competition and all applicable laws and regulations. The Group also strives to maintain sound relationships with politicians, governments, other organizations, and individuals and firmly confront anti-social forces as it aims to conduct fair transactions.

Management Structure

Since 2006, the AGC Group has been implementing a global legal management system and strengthening monthly reporting on and monitoring of disputes faced by the Group, in order to grasp their status quickly and deal with each case appropriately. With regard to the disputes faced by the Group, information is gathered at the Group General Counsel level and is promptly reported to senior management and the Group CEO. Moreover, periodic reports are given to the Board of Directors on the progress of the disputes and the status of the global legal Management system. In addition, the AGC Group is working to reduce legal management risk by hosting legal affairs meetings with Regional General Counsels and cooperating with related in-house divisions.

Groupwide Initiatives

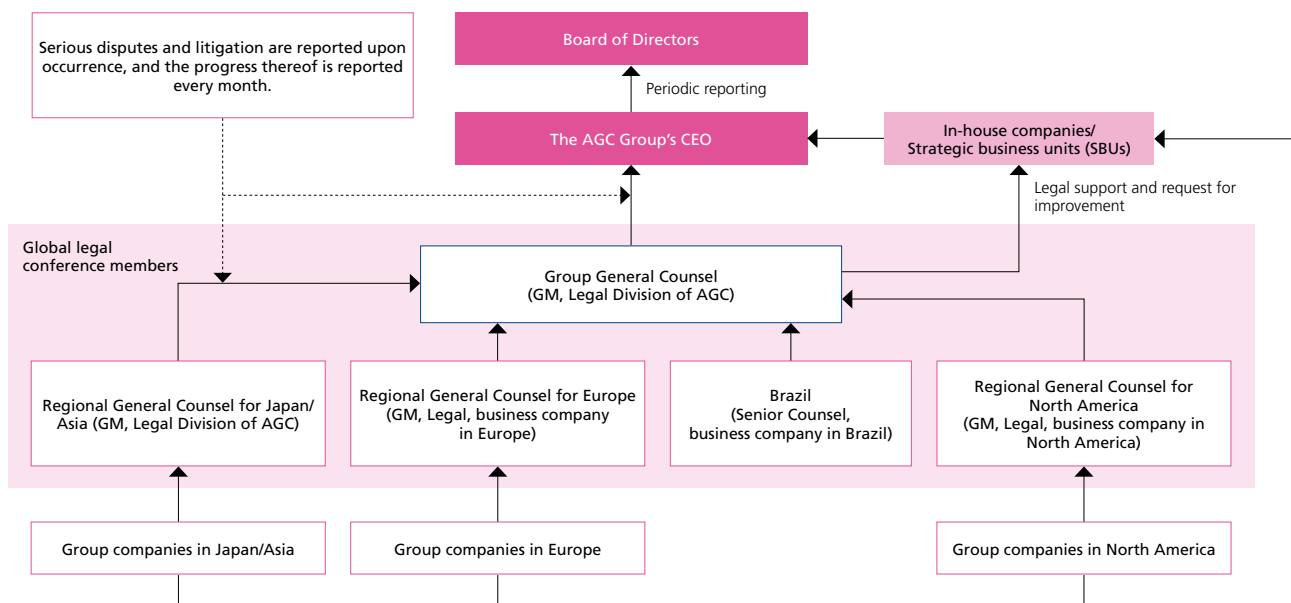
Compliance with Antitrust Laws

In addition to the AGC Group Code of Conduct that summarizes matters all employees must comply with in their work, the AGC Group has formulated and implemented global guidelines for compliance with antitrust laws. The guidelines state that, when meeting with a competitor company, (1) the legality of the purpose of the meeting shall be fully examined and participation shall be allowed only on an extremely limited basis, (2) advance permission to attend must be obtained from a supervisor, and (3), following attendance, meeting minutes must be prepared. Moreover, the Group is promoting face-to-face and e-learning education regarding compliance with antitrust laws in each region and organization. One of the global common priority audit items for internal audits is "organization and procedure for compliance with antitrust laws." Audits of the status of compliance with these global guidelines are also implemented.

Status of Implementing Measures for Complying with Antitrust Laws (AGC Group)

Year	Number of participants in e-learning	Number of internal audits
2021	Approx. 7,000	102

Global Legal Management System



■ Anti-Corruption Measures

The AGC Group Code of Conduct stipulates that the AGC Group maintain sound relationships with government agencies and other responsible organizations and individuals, and the Group works to comply with each country's and region's laws and regulations regarding anti-corruption. Moreover, with the prevention of bribery and other corrupt practices being strengthened worldwide, the AGC Group is promoting relevant education for its employees. In addition to the AGC Group Anti-Bribery Rules for public officers, the Group established and implemented procedures, concepts, and judgment criteria for high-risk countries and regions.

Further, in 2021 the AGC Group was not subject to any punitive measures issued by authorities in relation to corruption.

■ Compliance with Contractual Requirements and the Revised Worker Dispatching Act

The AGC Group conducts business in collaboration with business partners involving contracted companies and temporary workers. In addition, the Group regularly conducts a survey on compliance with contractual requirements at AGC production plants and major Group companies in Japan and confirms that compliance-related rules are being observed. The Group will continue to make efforts to disseminate and thoroughly comply with contractual requirements and comply with the revised Worker Dispatching Act.

■ Compliance with the Act against Delay in Payment of Subcontract Proceeds, etc., to Subcontractors

The AGC Group continuously educates its employees and managers to ensure compliance with the Act against Delay in Payment of Subcontract Proceeds, etc., to Subcontractors (hereafter, "the Act"). Since 2009, the Group has conducted e-learning initiatives for employees who are involved with transactions affected by the Act, including employees at Group companies in Japan. In 2021, we conducted an e-learning program on the Act for approximately 8,800 trainees. In November 2021, the Group held an event for approximately 20 outsourcing and purchasing managers from respective business divisions with the aim of sharing information on aspects of the Act that call for particular care.

■ Prevention of Insider Trading

To protect its shareholders and investors and ensure the fairness and reliability of securities markets, the AGC Group is making every effort to spread awareness of the prevention of insider trading. In addition to clearly stating in the AGC Group Code of Conduct that insider trading is forbidden, systems intended to prevent it are stipulated in the Information Control Council Establishment Guidelines and the Insider Trading Prevention and Control Rules. Furthermore, regular opportunities to learn about the AGC Group Code of Conduct are provided, and information regarding the prevention of insider trading is thoroughly disseminated. The understanding of this information is reaffirmed when oaths are taken. Special training is implemented for directors, executive managers, and personnel in specific posts (corporate planning, accounting, finance, corporate communications, investor relations, etc.). Furthermore, if an AGC Group director or employee has concerns as to whether buying or selling stocks could fall under insider trading, the Information Control Council prepares a system for review and works to prevent any instance of insider trading.

Respect for Intellectual Property Rights

Fundamental Approach

As stipulated in the AGC Group Charter of Corporate Behavior, the AGC Group properly manages and protects the Company's information, intellectual property rights, and assets, and it strives to respect the intellectual property rights of others, including customers and business partners.

Management Structure

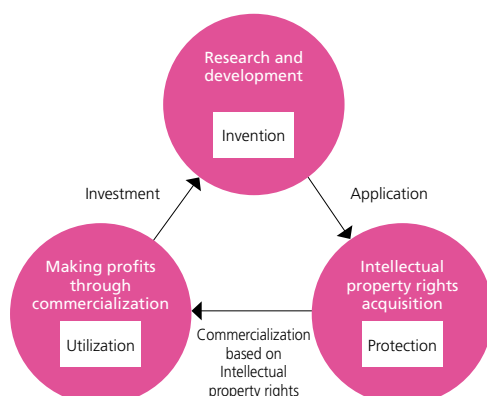
The AGC Group considers intellectual property rights such as patents, utility model rights, trademark rights, design rights, and copyrights as valuable intangible assets, and the Intellectual Property Division takes the lead in protecting and enforcing these rights.

Groupwide Initiatives

■ Protection and Utilization of Intellectual Property Rights Created within the AGC Group

In addition to making intellectual property rights as a vital business strategy resource, the AGC Group works to protect and further expand such rights and promote the use of intellectual property to heighten its competitive advantage. For example, the Group globally files intellectual property applications for inventions created at development sites in each country and works to acquire rights adapted to its business activities. Since procedures for the protection of intellectual property rights differ by country, rights acquisition is conducted in cooperation with local patent attorney offices and Group companies. The Group also takes strict action on any infringements of its intellectual property rights by other parties in compliance with the local laws and regulations of each country. In addition, to use the intellectual property rights held by the Group to promote intellectual property strategies linked to the business and brand strategies of each business division, intellectual property conferences attended by the heads of each business division are held regularly by each division.

🕒 Cycle of Intellectual Property Creation



■ Prevention of Infringement of the Intellectual Property Rights of Other Parties

The AGC Group is creating a framework, including employee education, to prevent infringement of the intellectual property rights of others. The Group continuously monitors the intellectual property rights of others and checks to make sure it will not be violating said rights before new products are released or new business operations commence.

■ Employee Training regarding Intellectual Property Rights

The AGC Group emphasizes employee training regarding intellectual property rights from the dual perspectives of adequately protecting its own intellectual property rights and respecting those of others. In Japan, aside from hosting intellectual property training for new employees, the Group carries out intellectual property training and promotes intellectual property education for each in-house company, technical division, and research division as necessary. Additionally, intellectual property training is implemented at overseas Group companies and tailored to suit local conditions.

Initiatives at Individual Companies

■ Rewarding the Inventions of Employees

AGC has a substantial reward system in place for outstanding employee inventions. Similar systems are being prepared at Group companies in Japan. In addition, reward systems are being prepared overseas based on the legal framework in each country and region, taking each location's present circumstances into consideration.

🌐 Reward System for Inventors

Maintaining Information Security

Fundamental Approach

Based on ISO 27000, the international standard for information security management systems, the AGC Group established an Information Security Policy. Based on this policy, which is shared Groupwide, the Group appropriately stores, uses, and manages informational assets and protects personal information.

Management Structure

Based on its global common initiative items, the AGC Group has formulated standards and guidelines, with additional items taking into account regional circumstances (Europe, the Americas, and Asia, including Japan). In addition, in the event of a serious information security incident occurring, the Group has established a system to minimize the impact in accordance with the AGC Group Crisis Management Guidelines.

Groupwide Initiatives

■ Strengthening Response Capabilities against Cyberattacks

To maintain stable transactions with its customers, the AGC Group is reinforcing initiatives for tackling the increasing threat of cyberattacks.

- We have formulated Groupwide common management regulations based on international standards for measures to address the security of our information systems and production equipment as well as improve our protection and detection equipment. At the same time, we have put in place a management system under which we are working to improve structures and carry out training with a view to strengthening our ability to respond quickly in the event of an information security incident occurring.
- To achieve this goal, we are continuously implementing technological penetration testing and comprehensive assessments by third parties.
- In addition, in light of the COVID-19 pandemic since 2020, we have strengthened our existing measures for addressing security issues in remote working.

■ Internal Audits on Information Security

The AGC Group has selected “measures for preventing leaks of important confidential information” as one of the shared global priority items for internal audits (see page 17).

Initiatives at Individual Companies

■ Information Security Training

Information security training is implemented at AGC as part of training for new-graduate hires and mid-career employees. We also provide training on a continuous basis for all employees.

Social Contribution Activities

AGC Group Social Contribution Basic Policy

Under the three pillars of the AGC Group Social Contribution Basic Policy—support for the next generation, harmony with local communities, and natural environment conservation—the AGC Group carries out social contribution activities in over 20 countries and regions throughout Japan and Asia, the Americas, and Europe. Moving forward, the Group will continue to actively promote social contributions for its diverse stakeholders and conduct activities that lead to the resolution of social issues.

AGC Group Social Contribution Basic Policy

(Established on February 10, 2010)

In its AGC Group Charter of Corporate Behavior, the AGC Group declares it will “strive to be a trusted corporate citizen, fulfilling its responsibilities to the communities in which it does business.” To achieve this goal, we conduct social contribution activities in three priority areas.

Priority Areas

1. Support for the next generation
We, as a creator of future value, support the development of children, who will carry the future, helping them live out their dreams.
2. Harmony with local communities
We, as a member of the communities in which we operate, contribute to their sustainable development.
3. Natural environment conservation
We, as a global enterprise, contribute to the resolution of global environmental problems.

Total Financial Expenditures on Social Contribution Activities (AGC Group)

Year	Amount
2019	¥5,690.0 million
2020	¥4,770.0 million
2021	¥3,730.0 million

Total Number of Employees Participating in Social Contribution Activities (the AGC Group)

Year	Number of Employees
2019	23,914
2020	11,543
2021	9,648

Total Expenditures by Field of Emphasis: 2021 (the AGC Group)

Category	Amount	Rate
Support for the next generation	¥1,868.0 million	50%
Harmony with local communities	¥786.0 million	21%
Natural environment conservation	¥395.0 million	11%
Others	¥687.0 million	18%

Expenditures by Use: 2021 Results (the AGC Group)

Purpose of Use	Amount	Rate
Donations, material donations	¥2,860.0 million	77%
Employee participation and dispatch	¥592.0 million	16%
Voluntary programs	¥258.0 million	7%
Opening of facilities, acceptance of tours	¥20.0 million	0%

Quality Assurance

Fundamental Approach

The AGC Group pursues Innovation & Operational Excellence, one of the Shared Values set out in **“Look Beyond”**. Further, the AGC Group Basic Quality Policy calls on us to continue creating the value that customers expect. Accordingly, in developing and marketing products and services of superior quality, the Group gives due consideration to safety and the environment. Moreover, we raise the quality of products and services to ensure the satisfaction and trust of customers.

Management Structure

Under the AGC Group Basic Quality Policy, the AGC Group has established autonomous quality management systems that comply with ISO 9001 and similar standards in each division. To this end, the Group conducts internal audits and reviews in a manner best suited to the business and division in question, and it continuously improves the effectiveness and efficiency of quality management systems. In addition, since 2013, in accordance with the concept of EHSQ Management, the EHSQ General Division seeks to comprehensively understand the EHSQ (environment, occupational health and safety, and quality) initiatives of the entire Group. In fiscal 2021, we established the AGC Group Quality Management Rules and took measures to improve quality. The general division is also building a system that contributes to EHSQ-related management activities for the entire Group. Regarding quality, the Group holds an Expanded Quality Conference for the managers of the quality departments in each business division every year to share issues and example cases. In fiscal 2021, the conference featured a review of the previous fiscal year, confirmation of issues that the AGC Group should address in the current fiscal year, and the sharing of information on the efforts of each division to improve the reliability of quality data, which included the automation of inspections.

Acquisition of ISO 9001 and ISO/IATF 16949* Certification

(As of the end of December 2021)

Location	Number of certified organizations
Japan	32
Asia (excluding Japan)	29
Europe	51
the Americas	14
Total	126

* Standards for quality management systems to be applied in the automotive industry, which requires compliance with the global procurement criteria for automotive parts

The AGC Group Basic Quality Policy

(Established on September 8, 2004 and revised on March 29, 2013)

Basic Policy

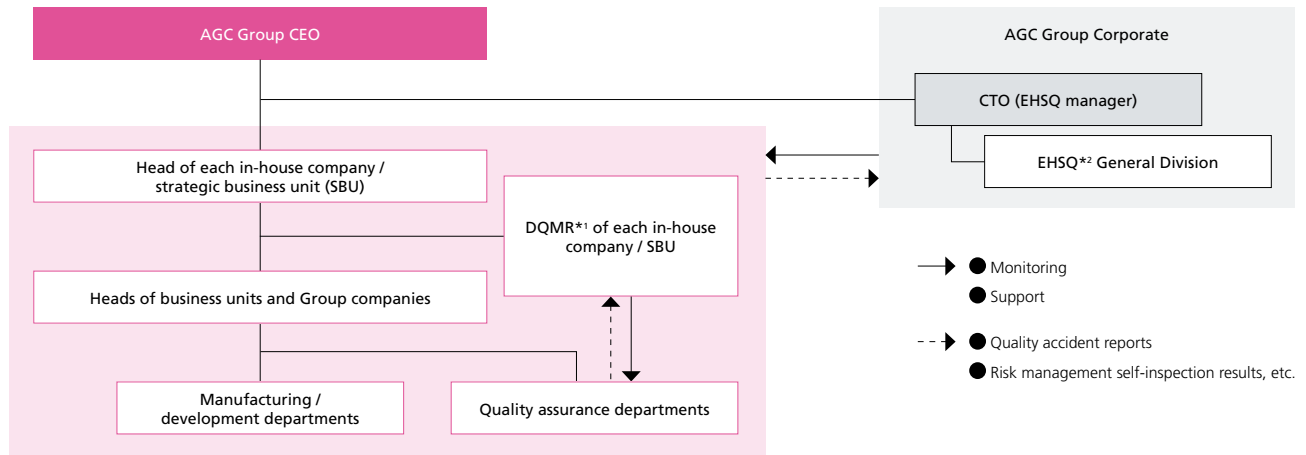
The AGC Group will continue to create the value expected by customers by pursuing Innovation & Operational Excellence as one of the Shared Values in the Group Vision **“Look Beyond”**

Guidelines for Quality Activities

Having “incorporating the concept of customer satisfaction into daily work processes” as a fundamental aspect of our businesses, we will act to gain trust from our stakeholders, including customers, based on the following guidelines.

1. We will provide products and services that conform to the requirements of laws, regulations, and customers.
2. We will ensure and improve the quality of our products and services, including appropriate consideration for safety and the environment.
3. We will participate in the continuous improvement of the effectiveness and efficiency of our quality management, and each of us will individually strive to enhance the quality of our work.
4. In order to ensure that the above points are materialized, each business division will establish individual policies and targets and implement a PDCA cycle

Quality Management System



*1 Division quality management representative

*2 Environment, occupational health and safety, and quality

Groupwide Initiatives

Compliance with Legal and Regulatory Requirements regarding Products

Through risk management self-inspections, which are based on an integrated risk management system, the AGC Group annually checks the management of systems related to compliance with laws and regulations on products at each business division and continuously pursues improvements.

Initiatives at Individual Companies

Improvement of the Reliability of Product Inspection Data

To improve the reliability of product inspection data, the AGC Group has established a corporate-level team tasked with the automation of product inspections. The Group is developing and introducing to each Group company Internet of Things (IoT)-enabled automated inspection systems that do not require human intervention. In addition, for inspection processes that are difficult to automate, we are strengthening management measures to ensure the provision of reliable data on quality to customers.

Product Safety Initiatives

Fundamental Approach

Under the AGC Group's management policy of "increasing safety, security, and comfort around the world," the Group conducts reviews that include the perspective of product safety, from the product development stage through to trial manufacture and actual manufacture, to avoid harm or danger to the customer. The Group fully discloses appropriate information for the safe use of its products and has acquired Japan Industrial Standard (JIS) certification for some of its products. Product safety is also certified by third-party organizations.

Management Structure

Within the AGC Group, each division builds quality management systems that comply with ISO 9001 and other standards. The Group also conducts internal audits and reviews best suited to the business division in question and continuously improves the effectiveness and efficiency of quality management systems.

Groupwide Initiatives

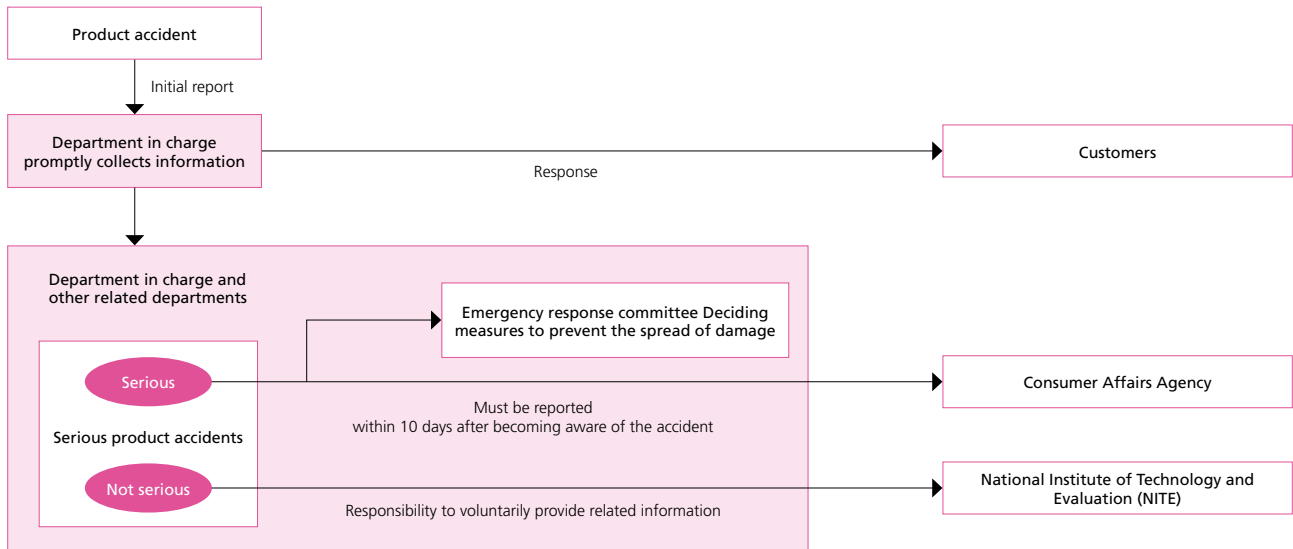
■ Compliance with the Consumer Product Safety Act

The AGC Group (Japan) has created a system to promptly report serious accidents regarding Group products to the Consumer Affairs Agency and prevent damage escalation, based on the Consumer Product Safety Act and Safe Management of Product Related Defects Standards (enacted in 2014). By confirming risk management conditions on a regular basis corresponding to the risk level set for the product in question and through other initiatives, the Group seeks to prevent accidents before they occur. Adding to these efforts, information on product accidents released by the Consumer Affairs Agency and the National Institute of Technology and Evaluation (NITE) is collected and classified when it concerns AGC Group products. The information is shared internally. Study meetings are held to allow the employees in charge at related Group divisions to maintain and raise knowledge of product safety. In 2021, the AGC Group reported one serious incident to the Consumer Affairs Agency.

● Change in the Number of Reported Serious Product Accidents (the AGC Group in Japan)

Year	Number of cases
2017	0
2018	0
2019	1
2020	0
2021	1

Reporting Flow for Serious Product Accidents under the Consumer Product Safety Act

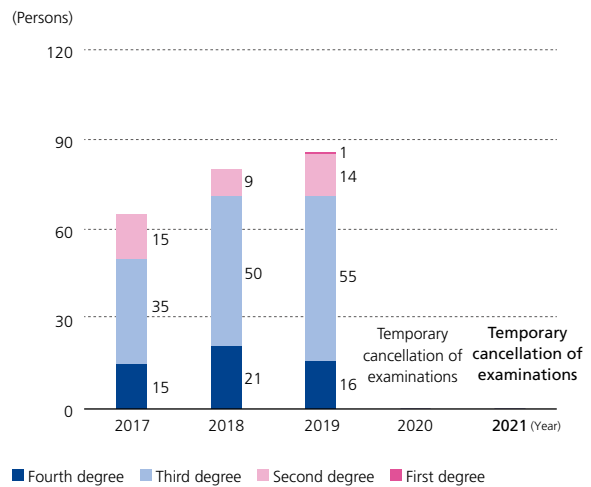


Implementing Quality Training

The AGC Group provides quality training in each business division according to their respective needs. Based on necessity, the Group is also taking steps to maintain and raise quality awareness through quality compliance training for employees, drawing on internal and external quality case studies. The AGC Group (Japan) encourages its employees to acquire a certificate on quality control.* In 2021, due to the COVID-19 pandemic, the AGC Group (Japan) canceled group examinations for the certificate on quality control.

* A certificate on quality control (QC) issued by the Japanese Society for Quality Control

Number of Employees Who Passed the QC Certification Examination (the AGC Group in Japan)



Pursuit of Customer Satisfaction (CS)

Fundamental Approach

The AGC Group constantly strives to achieve customer satisfaction (CS). The Group defines customers as “people and organizations who receive benefit (value) from the products (including services) and information entailed in the AGC Group’s work.” As such, the Group works toward CS of not only business customers but all Group employees.

Management Structure

Under the quality management system of the AGC Group, in-house company takes various measures to enhance CS. In addition to conducting CS education through rank-specific training, the Group actively works to ensure the CS spirit is rooted in the AGC Group’s corporate culture.

Groupwide Initiatives

■ Implementing Full-Scale CS Training

Based on the management policy of creating new value and functions for customers and business partners and building trust with them, the employees of AGC incorporate the CS viewpoint into their daily activities as a fundamental aspect of their work. To add further value for its customers, the Group provides specialized CS training and other types of training to all divisions based on their specific needs. Moreover, CS is an important theme in the Group’s rank-specific training. As of December 31, 2021, a total of 8,145 employees have undergone CS training (excluding training provided by specific divisions).

Customer Service

The AGC Group seeks to provide CS by establishing customer centers and customer service windows for specific businesses. The Architectural Glass Asia Pacific Company (Japan) has established a customer center for architectural glass to respond accurately to inquiries from customers in the building industry, as well as regular customers. The Architectural Glass Europe & Americas Company (Europe) also produces websites for customers in multiple local languages. Also, the Chemicals Company has created inquiry forms on its website in 10 languages. A system has been established to automatically forward inquiries accepted through these forms to the most qualified specialist available, depending on the target business, product, and region of the sender, and response is made in a timely manner.

GRI Standards Index

Sustainability Data Book 2022 is a tool for non-financial information disclosure (sustainability reporting) and is based on the Core option of the GRI Standards.

Core Option Criteria for the GRI Standards

- Disclosing all General Standard Disclosures, which are required for the Core option
- Disclosing at least one indicator related to each identified material aspect (material issue)

General Standard Disclosures (Core)

Only General Standard Disclosures required for the Core option have been included.

1. Organizational profile

GRI Standards	Requirements	Page listed	
GRI 102: General Disclosures 2016	102-1	Name of the organization	<i>AGC Integrated Report 2022 (P98)</i> <i>Sustainability Data Book 2022 (P1)</i> Company Overview Corporate Information
	102-2	Activities, brands, products, and services	<i>AGC Integrated Report 2022 (P10–11, 39–57)</i> <i>Sustainability Data Book 2022 (P3–4)</i> Overview of the AGC Group Our Network Company Overview Products
	102-3	Location of headquarters	<i>AGC Integrated Report 2022 (P98)</i> <i>Sustainability Data Book 2022 (P1)</i> Company Overview Corporate Information
	102-4	Location of operations	Our Network
	102-5	Ownership and legal form	<i>AGC Integrated Report 2022 (P80)</i> Corporate Governance Corporate Information
	102-6	Markets served	<i>AGC Integrated Report 2022 (P10–11, 39–57)</i> Company Overview Products
	102-7	Scale of the organization	<i>AGC Integrated Report 2022 (P10–11)</i> <i>Sustainability Data Book 2022 (P3–4)</i> Overview of the AGC Group Financial Review 2021 (English only) Company Information
	102-8	Information on employees and other workers	<i>Sustainability Data Book 2022 (P59,61)</i> Human Resources Management
	102-9	Supply chain	<i>Sustainability Data Book 2022 (P83,86)</i> Supply Chain Procurement Policy
	102-10	Significant changes to the organization and its supply chain	Not applicable
	102-11	Precautionary principle or approach	<i>Sustainability Data Book 2022 (P15–16)</i> Risk Management Financial Review 2021 (English only) (P8–11)
	102-12	External initiatives	<i>Sustainability Data Book 2021 (P27)</i> Local communities, NGOs/NPOs, Governments <i>Sustainability Data Book 2021 (P54)</i> Conservation of Natural Capital and Biodiversity
	102-13	Membership in associations	<i>Sustainability Data Book 2022 (P27)</i> Local communities, NGOs/NPOs, Governments <i>Sustainability Data Book 2021 (P54)</i> Conservation of Natural Capital and Biodiversity

2. Strategy

GRI Standards	Requirements	Page listed
GRI 102: General Disclosures 2016	102-14 Statement from senior decision maker	<i>AGC Integrated Report 2022 (P18–24)</i> <i>Sustainability Data Book 2022 (P2)</i> A Message from the President & CEO Message from the President & CEO

3. Ethics and integrity

GRI Standards	Requirements	Page listed
GRI 102: General Disclosures 2016	102-16 Values, principles, standards, and norms of behavior	<i>AGC Integrated Report 2022 (P4–5)</i> <i>Sustainability Data Book 2022 (P5–8)</i> Sustainability at the AGC Group AGC's Group Vision

4. Governance

GRI Standards	Requirements	Page listed
GRI 102: General Disclosures 2016	102-18 Governance structure	<i>AGC Integrated Report 2022 (P80–85)</i> <i>Sustainability Data Book 2022 (P13–14)</i> Corporate Governance Corporate Governance

5. Stakeholder engagement

GRI Standards	Requirements	Page listed
GRI 102: General Disclosures 2016	102-40 List of stakeholder groups	<i>Sustainability Data Book 2022 (P11)</i> Stakeholders
	102-41 Collective bargaining agreements	<i>Sustainability Data Book 2022 (P56)</i> Respecting Human Rights
	102-42 Basis for identifying and selecting stakeholders with whom to engage.	<i>Sustainability Data Book 2022 (P11)</i> Stakeholders
	102-43 Approach to stakeholder engagement	<i>Sustainability Data Book 2022 (P11–12)</i> Stakeholders <i>Sustainability Data Book 2022 (P62)</i> Improving Employee Engagement Corporate Governance Report
	102-44 Key topics and concerns raised	<i>Sustainability Data Book 2022 (P11–12)</i> Stakeholders

6. Reporting practice

GRI Standards	Requirements	Page listed
GRI 102: General Disclosures 2016	102-45	Entities included in the consolidated financial statements <i>Financial Review 2021 (English only) (P64–65)</i>
	102-46	Defining report content and topic boundaries <i>AGC Integrated Report 2022 (P1)</i> <i>Sustainability Data Book 2022 (P1)</i> Scope of This Report GRI Standards Index
	102-47	List of material topics <i>AGC Integrated Report 2022 (P38)</i> <i>Sustainability Data Book 2022 (P9)</i> Sustainability at the AGC Group AGC Sustainability management
	102-48	Restatements of information Not applicable
	102-49	Changes in reporting Not applicable
	102-50	Reporting period <i>AGC Integrated Report 2022 (P1)</i> <i>Sustainability Data Book 2022 (P1)</i> Scope of This Report GRI Standards Index
	102-51	Date of most recent report <i>Sustainability Data Book 2022 (P1)</i>
	102-52	Reporting cycle <i>Sustainability Data Book 2022 (P1)</i>
	102-53	Contact point for questions regarding the report Inquiries Regarding Sustainability
	102-54	Claims of reporting in accordance with the GRI Standards i. Core ii. This table
	102-55	GRI content index This table
	102-56	External assurance <i>Sustainability Data Book 2022 (P95–96)</i> Verification Statement <i>Financial Review 2021 (English only) (P66–72)</i>
	GRI 103: Management Approach 2016	103-1

Material Topics

Economic

GRI Standards	Requirements	Page listed
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed <i>Financial Review 2021 (English only)</i>
	201-2	Financial implications and other risks and opportunities due to climate change <i>AGC Integrated Report 2022 (P74–76)</i> <i>Sustainability Data Book 2022 (P28–31)</i> Climate Action
	201-3	Defined benefit plan obligations and other retirement plans <i>Financial Review 2021 (English only) (P40)</i>
	201-4	Financial assistance received from government
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported <i>AGC Integrated Report 2022 (P8)</i>
	203-2	Significant indirect economic impacts <i>AGC Integrated Report 2022 (P36)</i> <i>Sustainability Data Book 2021 (P10)</i> Sustainability at the AGC Group

Environmental

GRI Standards	Requirements	Page listed
GRI 301: Materials 2016	301-1	Materials used by weight or volume <i>Sustainability Data Book 2022 (P44)</i> Sustainable Use of Resources
	301-2	Recycled input materials used <i>Sustainability Data Book 2022 (P44)</i> Sustainable Use of Resources
	301-3	Reclaimed products and their packaging materials

GRI 302: Energy 2016	302-1	Energy consumption within the organization	<i>Sustainability Data Book 2022 (P38)</i> Climate Action
	302-2	Energy consumption outside of the organization	
	302-3	Energy intensity	
	302-4	Reduction of energy consumption	
	302-5	Reductions in energy requirements of products and services	
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	
	303-2	Management of water discharge-related impacts	<i>Sustainability Data Book 2022 (P47–48)</i> Conservation of Natural Capital and Biodiversity
	303-3	Water withdrawal	<i>Sustainability Data Book 2021 (P49–50)</i> Conservation of Natural Capital and Biodiversity
	303-4	Water discharge	Site Reports
	303-5	Water consumption	
GRI 304: Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas	<i>Sustainability Data Book 2022 (P46)</i> Conservation of Natural Capital and Biodiversity
	304-2	Significant impacts of activities, products, and services on biodiversity	<i>Sustainability Data Book 2022 (P45)</i> Conservation of Natural Capital and Biodiversity Society in Harmony with Nature
	304-3	Habitats protected or restored	<i>Sustainability Data Book 2022 (P46–47)</i> Conservation of Natural Capital and Biodiversity
	304-4	International Union for Conservation of Nature Red List species and national conservation list species with habitats in areas affected by operations	<i>Sustainability Data Book 2022 (P46)</i> Conservation of Natural Capital and Biodiversity
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emission	<i>AGC Integrated Report 2022 (P77)</i> <i>Sustainability Data Book 2022 (P32)</i> Climate Change Initiatives
	305-2	Energy indirect (Scope 2) GHG emissions	<i>AGC Integrated Report 2022 (P77)</i> <i>Sustainability Data Book 2022 (P32)</i> Climate Change Initiatives
	305-3	Other indirect (Scope 3) GHG emissions	<i>AGC Integrated Report 2022 (P77)</i> <i>Sustainability Data Book 2022 (P33)</i> Climate Change Initiatives
	305-4	GHG emissions intensity	<i>AGC Integrated Report 2022 (P77)</i> <i>Sustainability Data Book 2022 (P33)</i> Environmental Management
	305-5	Reduction of GHG emissions	<i>AGC Integrated Report 2022 (P76–77)</i>
	305-6	Emissions of ozone-depleting substances (ODS)	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	<i>Sustainability Data Book 2022 (P52)</i> Effective Use of Resources Site Reports
GRI 306: Waste 2016	306-1	Waste generation and the significant impacts related to waste	<i>Sustainability Data Book 2022 (P40–42)</i> Effective Use of Resources
	306-2	Management of the significant impacts related to waste	<i>Sustainability Data Book 2022 (P40–42)</i> Effective Use of Resources Site Reports
	306-3	Waste generated	<i>Sustainability Data Book 2022 (P43–44)</i> Effective Use of Resources
	306-4	Undisposed waste	<i>Sustainability Data Book 2022 (P43–44)</i> Effective Use of Resources
	306-5	Disposed waste	<i>Sustainability Data Book 2022 (P43–44)</i> Effective Use of Resources
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	<i>Sustainability Data Book 2022 (P26)</i> Prevention of Environmental Pollution and Accidents
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	
	308-2	Negative environmental impacts in the supply chain and actions taken	<i>Sustainability Data Book 2022 (P83–86)</i> Supply Chain Procurement Policy

Social

GRI Standards	Requirements	Page listed
GRI 401: Employment 2016	401-1	New employee hires and employee turnover <i>Sustainability Data Book 2022 (P61)</i> Human Resource Management
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees
	401-3	Parental leave <i>Sustainability Data Book 2022 (P67)</i> Work-Life Balance
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system <i>Sustainability Data Book 2022 (P71–73)</i> Occupational Health & Safety
	403-2	Occupational health services <i>Sustainability Data Book 2022 (P71–76)</i> Occupational Health and Safety
	403-3	Workers with high incidence or high risk of diseases related to their occupation <i>Sustainability Data Book 2022 (P71–76)</i> Occupational Health and Safety
	403-4	Worker participation, consultation, and communication on occupational health and safety <i>Sustainability Data Book 2022 (P74–76)</i> Occupational Health & Safety
	403-5	Worker training on occupational health and safety <i>Sustainability Data Book 2022 (P74–76)</i> Occupational Health & Safety
	403-6	Promotion of worker health <i>Sustainability Data Book 2022 (P77–79)</i> Creating a Comfortable Workplace Human Resource
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships
	403-8	Workers covered by an occupational health and safety management system <i>Sustainability Data Book 2022 (P71–72)</i> Occupational Health & Safety
	403-9	Work-related injuries <i>Sustainability Data Book 2022 (P72–75)</i> Occupational Health & Safety Site Reports
	403-10	Work-related ill health
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor <i>Sustainability Data Book 2022 (P57)</i> Respecting Human Rights
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor <i>Sustainability Data Book 2022 (P57)</i> Respecting Human Rights
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs Local communities Site Reports
	413-2	Operations with significant actual and potential negative impacts on local communities
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria
	414-2	Negative social impacts in the supply chain and actions taken <i>Sustainability Data Book 2022 (P83–86)</i> Supply Chain Procurement Policy